

NYPL RESEARCH LIBRARIES

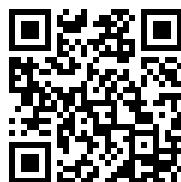


3 3433 10779 1232

This is a reproduction of a library book that was digitized by Google as part of an ongoing effort to preserve the information in books and make it universally accessible.

Google™ books

<https://books.google.com>



VFA
Chicago

William H. ...

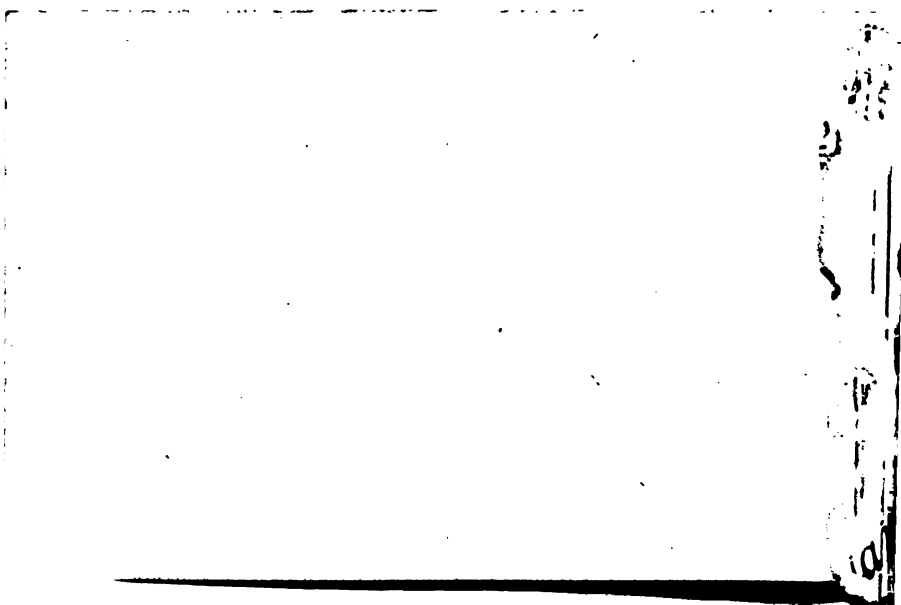
Ideal Power....

Chicago,
Ill.,

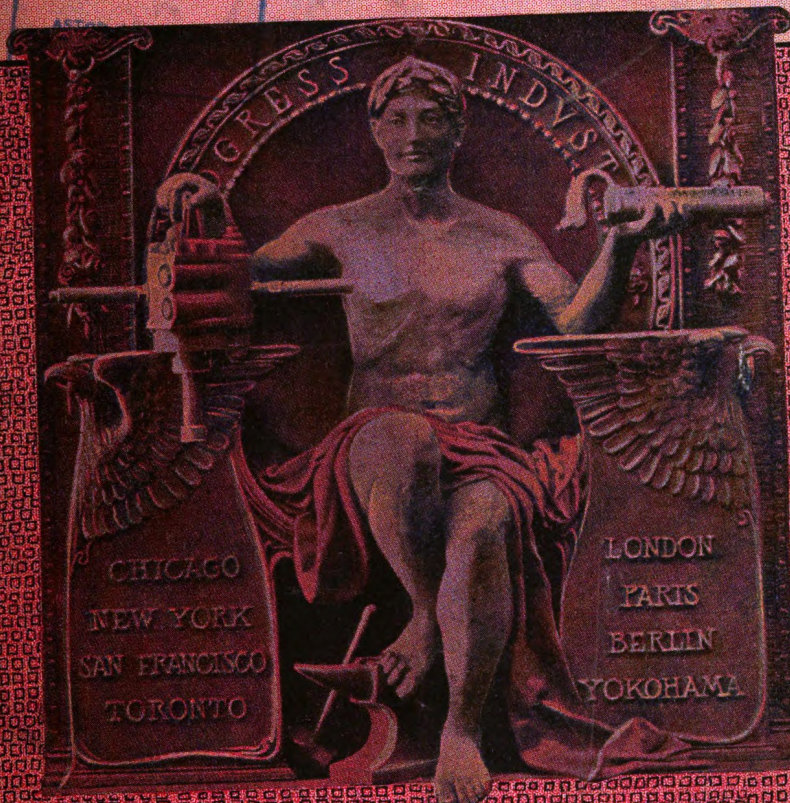
Gave up hope of more. W.B.G. Dec.2, 1921.

Last issue received vol.12 no.7 Sept. 1919.

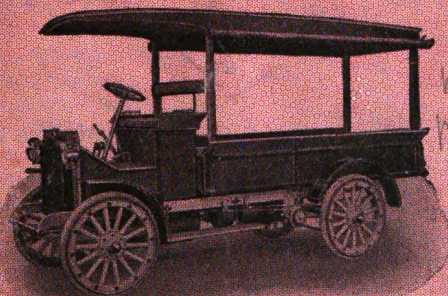
TECHNOLOGY DIVISION



IDEAL POWER



Little Giant Model H (4 Cylinder) One Ton Truck



Standard Canvas Top Body

PUBLISHED MONTHLY BY
Chicago Pneumatic Tool Company
 CHICAGO NEW YORK

Chicago Pneumatic Tool Company.

General Office, Fisher Bldg.

Eastern Office, No. 50 Church St.

CHICAGO

NEW YORK

BRANCH OFFICES

Boston: 191 High Street

Birmingham: 634 Brown-Marx Bldg.

Buffalo: 503 Ellicott Square Bldg.

Cincinnati: 1008 Mercantile Library Bldg.

Cleveland: 1241 E. 49th St.

Cleveland: 2122 Euclid Ave.

Denver: 1727 Wazee St.

Detroit: 547 Woodward Ave.

El Paso: 303 San Francisco St.

Erie, Pennsylvania

Franklin, Pennsylvania

Knoxville: 1005 Holston National
Bank Bldg.

Los Angeles: 241-243 So. Los Angeles St.

Louisville, Ky.

Marquette, Mich.: Lake Shore Eng. Wks.

Philadelphia: 1740-42 Market St.

Pittsburgh: 10 and 12 Wood St.

Portland, Ore.: 68 First St.

Richmond, Va.: 1004 Mutual Bldg.

Salt Lake City: 117-119 W. 2nd South St.

Seattle: 122 King St.

Spokane: Cor. R. R. and Wall St.

St. Louis: 813-19 Hempstead St.

St. Paul: Pioneer Bldg.

San Francisco: 71 First St.

FOREIGN

Canada: { Montreal, Canadian Pneumatic Tool Co.
The Holden Co., Ltd., Montreal, Toronto, Winnipeg.

British Columbia: Vancouver, Holden Co., Ltd., 429 Pendar St., L. L. Johnson, Rep.

Mexico: Mexico City, The General Supply Co., Av. Isabel La Catolica, No. 51.

Northern Mexico: (Sonora and Chihuahua), H. A. Carpenter & Bro., El Paso, Tex

Great Britain: { London, The Consolidated Pneumatic Tool Company

Spain: { Ltd., 9, Bridge Street, Westminster, S. W.

Portugal: }

France: Paris, Anciens Etablissement Glaenger & Perreaud 18-20 Faubourg du Temple.

Belgium: Brussels, The Consolidated Pneumatic Tool Co., Ltd., 22 Chaussee de Forest, Porte de Hal.

Italy: Milan, The Consolidated Pneumatic Tool Co., Ltd., via A Cappellini 7.

Germany:

Austria Hungary:

Balkan States:

Norway:

Sweden:

Holland:

Switzerland:

Denmark:

Berlin, Internationale Pressluft & Elektrizitats-Gesellschaft m. b. H. Berlin C. 54, Weinmeisterhof, Weinmeisterstrasse No. 14.

Russia: { St. Petersburg, Phoenix Engineering Works Co., Ltd., Polustrovskaya Quay No. 39.

India: { Bombay, Consolidated Pneumatic Tool Co., Ltd., Rampart Row, Fort.

Calcutta, The Consolidated Pneumatic Tool Co., Ltd., 8 Lal Bazar St.

Japanese Empire: Tokyo, Osaka, Seoul, Dairen, The F. W. Horne Co.

Philippine Islands: Manila, Frank L. Strong Machinery Co., 105 Escolta.

Australia: Sydney, Henry W. Peabody & Co.

New Zealand: Wellington, Henry W. Peabody & Co.

South America: Buenos Aires, Argentina, Evans, Thornton & Co.

South Africa: { Johannesburg, The Consolidated Pneumatic Tool Co., Ltd.,
3 and 9 Cullinan Buildings.

BULLETIN DIRECTORY

Requests for these bulletins should be directed to our Chicago or New York offices or to our nearest branch as shown on inside front cover.

PNEUMATIC TOOLS

- 121... Pneumatic Rammers and Foundry Appliances.
- 124... Pneumatic Riveting, Chipping, Calking and Stone Hammers.
- 125... Pneumatic Yoke, Jam and Shell Riveters, Holders-on, Drift Bolt Drivers, Rivet Busters.
- 126... Compression Riveters.
- 127... Pneumatic Drills, Reamers, Wood Borers, Flue Rolling and Tapping Machinery and Grinders.
- 128... Miscellaneous equipment for Pneumatic Drills, viz: Chucks, Twist Drills, Reamers, Augers, Flue Cutters, Flue Expanders, Angle Gears.
- 129... Hose, Hose Couplings and Hose Clamp Tools.
- 130... Lubrication of Pneumatic Tools.
- 131... Miscellaneous Tools, viz: Pipe Benders, Air Forge, Bolt Nipper, Drilling Stands, Blow-off Cocks, Bell Ringers, Drill Repair Vises, Painting Machines.
- 132... Pneumatic Motors and Pneumatic Geared Hoists.
- 133... Cylinder Air Hoists and Jacks.

ELECTRIC TOOLS

- E-22.. Heavy Duty Electric Drills, Alternating Current.
- E-23.. Air Cooled Direct Current Drills.
- E-25.. Electric Hoists.
- E-27.. Heavy Duty Electric Drills, Direct Current.
- E-29.. Duntley Electric Grinders.
- E-30.. Universal Electric Drills.
- E-31.. Duntley Electric Drilling Stands.
- E-32.. Duntley Track Drills.

AIR COMPRESSORS

- 34-A.. Class "G" Steam Driven "Chicago Pneumatic" Compressors.
- 34-B.. "Chicago Pneumatic" Power Driven Compressors.
- 34-C.. "Chicago Pneumatic" Gasoline Driven Compressors.
- 34-D.. "Chicago Pneumatic" Corliss Compressors, Steam Driven.
- 34-F.. Design and Construction Class "G" "Chicago Pneumatic" Compressors.

- 34-G.. Air Receivers, Aftercoolers, Reheaters, etc.
- 34-H.. General Instructions for Installing and Operating "Chicago Pneumatic" Compressors.
- 34-L.. General Pneumatic Engineering Information.
- 34-O.. Instructions for the Installation and Care of "Chicago Pneumatic" Gasoline Driven Air Compressors.
- 34-P.. Class M-CB and M-CE New Enclosed Type Self-Oiling "Chicago Pneumatic" Power Driven Compressors.
- 34-R.. Class L-SS and L-SB New Enclosed Type Self-Oiling "Chicago Pneumatic" Compressors.
- 34-T.. Class "M" Corliss Enclosed Type Self-Oiling Four Valve "Chicago Pneumatic" Steam Driven Compressors.

ROCK DRILLS AND HAND DRILLS

- 148.. Chicago Valveless Hand Drills.
- 149.. Chicago Portable Mine Hoist.
- 150.. Chicago Coal Drills.
- 151.. Chicago Slogger Rock Drills.
- 152.. Chicago Gatling Drills.
- 153.. Chicago Sinker.
- 154.. Chicago Stopper.
- 172.. Chicago Plug and Feather Drill.

LITTLE GIANT TRUCK

- 162.. \$10,000 and an Idea.
- 164.. Biography of the Little Giant.
- 165.. Model H Chauffeur.
- 187.. Comparison Horse and Wagon with Little Giant Delivery.

ROCKFORD and MISCELLANEOUS

- 37.. Stone Carving Tools and Stone Dressers.
- 42.. Boyer Speed Recorder.
- 43.. Rockford Railway Motor Car.
- 117.. Lubrication of Rockford Cars.
- 119.. Operation of Rockford Cars.
- 166.. Boyer Speed Recorder with Clock Attachment.
- 167.. Zerbee Safety Valve Discharge Register.

CHICAGO PNEUMATIC TOOL CO.

1014 Fisher Bldg., CHICAGO

Branches Everywhere

50 Church St., NEW YORK

When writing to advertisers please mention Ideal Power.

CONVENTION DATES.

May 5-8, 1914—Air Brake Association at Hotel Pontchartrain, Detroit.

May 18-20, 1914—Railway Storekeepers' Association at Hotel Raleigh, Washington, D. C.

May 18-21, 1914—International Railway Fuel Association at Chicago.

May 19-22, 1914—Association of Railway Telegraph Superintendents at New Orleans, La.

May 25-28, 1914—Master Boiler Makers' Association at Hotel Walton, Philadelphia.

May (third Thursday and Friday), 1914—American Association of Railroad Superintendents.

June 2-5, 1914—American Society of Civil Engineers at Baltimore, Md.

June 10-12, 1914—Master Car Builders' Association at Atlantic City, N. J.

June 10-17, 1914—Railway Supply Manufacturers' Association at Atlantic City, with M. C. B. and M. M. Assn.

June 15-17, 1914—American Railway Master Mechanics' Association at Atlantic City, N. J.

June 16-19, 1914—American Society of Mechanical Engineers at St. Paul—Minneapolis, Minn.

July 14-17, 1914—International Railway General Foremen's Association at Hotel Sherman, Chicago.

July 20-22, 1914—American Railway Tool Foremen's Association, Hotel Sherman, Chicago.

August (third Tuesday), 1914—International Railroad Master Blacksmiths' Association at Chicago.

August, 1914—Traveling Engineers' Association at Chicago.

Sept. 1-4, 1914—American Boiler Manufacturers' Association. Waldorf-Astoria Hotel, New York City.

Sept. 8-10, 1914—Roadmasters' and Maintenance of Way Association at Chicago.

Sept. 8-11, 1914—Master Car and Locomotive Painters' Association at Nashville, Tenn.

Oct. 19-23, 1914—Association of Railway Electrical Engineers at Chicago.

Oct. 20-22, 1914—American Railway Bridge and Building Association at Los Angeles.

Nov. 17-19, 1914—Maintenance of Way and Master Painters' Association of the United States and Canada at Detroit, Mich.

Jan. 19-21, 1915—American Wood Preservers' Association at Chicago.

March 15-19, 1915—National Railway Appliances Association at Chicago.

June, 1915—International Railway Congress at Berlin, Germany.

ENGINEERING SOCIETIES, ETC.

American Association of Railroad Superintendents—Secretary, E. H. Harman, St. Louis, Mo.

American Concrete Institute—Secretary, Edw. E. Krauss, Harrison Bldg., Philadelphia, Pa.

American Electric Railway Engineering Association—Secretary-Treasurer, H. C. Doncker, 29 W. 39th St., New York, N. Y.

American Highway Association—Secretary, J. E. Pennypacker, Jr., Colorado Bldg., Washington, D. C.

American Institute of Electrical Engineers—Secretary, F. L. Hutchinson, 33 W. 39th St., New York City; Honorary Secretary, R. W. Pope.

American Institute of Mining Engineers—Secretary, Bradley Stoughton, 29 W. 39th St., New York City.

American Mining Congress—Secretary, J. E. Callbreath, Jr., 1021 Munsey Bldg., Washington, D. C.

American Order of Steam Engineers—Supreme Chief Engineer, Geo. W. Goodwin, Towson, Md.; Ed. A. Reboul, Secretary, 1110 Earl St., Philadelphia.

American Railway Engineering Association—Secretary, E. H. Fritch, 1011 Karpen Bldg., Chicago, Ill.

American Road Builders' Association—Secretary, E. L. Powers, 150 Nassau St., New York. Annual convention, Dec. 9-12, at Philadelphia.

American Society of Civil Engineers—Secretary, Chas. Warren Hunt, 220 W. 57th St., New York City.

American Society of Engineering Contractors—Secretary, J. R. Wemlinger, 11 Broadway, New York City.

American Society of Heating and Ventilating Engineers—Secretary, E. A. Scott, 29 W. 39th St., New York City.

American Society of Mechanical Engineers—Secretary, Calvin W. Rice, 29 W. 39th St., New York City.

American Society of Naval Engineers—Secretary-Treasurer, Lieut. O. L. Cox, U. S. Navy, Navy Department, Washington, D. C.

American Water Works Association—Secretary, J. M. Diven, 47 State St., Troy, N. Y.

Association of Civil Engineers, Cornell University—President, V. G. Thomassen, Ithaca, N. Y.; Secretary, J. M. Sill, Ithaca, N. Y.

Association of Engineering Societies—Chairman Board of Managers, Prof. Gardner S. Williams, University of Michigan, Ann Arbor, Mich.; Secretary, Fred Brooks, 31 Milk St., Boston, Mass.

Association of Railway Electrical Engineers—Secretary, J. A. Andreucetti, C. & N. W. Ry. Co., Chicago, Ill.

Boston Society of Civil Engineers—Secretary, S. Everett Tinkham, 715 Tremont Temple, Boston, Mass.

Canadian Society of Civil Engineers—Secretary, Clement H. McLeod, 176 Mansfield St., Montreal, Can.

Canadian Railway Club—Secretary, James Powell, Grand Trunk Ry., Montreal, Que.

Central Railway Club—Secretary, H. D. Vought, 95 Liberty St., New York.

Civil Engineers' Society of St. Paul—Secretary, L. S. Pomeroy, Old State Capitol Bldg., St. Paul, Minn.

Cleveland Engineering Society—Secretary, David Gahr, Cleveland, Ohio.

Connecticut Society of Civil Engineers—Secretary-Treasurer, J. Frederick Jackson, New Haven, Conn., Box 1304.

Detroit Engineering Society—Secretary-Treasurer, Frederick H. Mason, 614 Moffat Bldg., Detroit, Mich.

Engineering Association of the South—Secretary-Treasurer, J. C. Evans, Nashville, Tenn., Carnegie Library.

Engineers' Club of Cincinnati—Secretary, E. A. Gast, P. O. Box 333, Cincinnati, Ohio.

Engineers' Club of Minneapolis—President, L. S. Gillette, 74 Chamber of Commerce, Minneapolis, Minn.; Secretary, Louis Clousing, 2411 Oakland Ave., Minneapolis.

Engineers' Club of Philadelphia—Secretary, Edw. E. Krauss, Philadelphia, Pa.

Engineers' Club of St. Louis—Secretary, W. W. Horner, 5203 Maple Ave., St. Louis, Mo.

Engineering Societies of Purdue University, Lafayette, Ind.

Engineers' Society of Western New York—President, Louis H. Knapp, 366 Ellicott Square Bldg., Buffalo; Secretary, Thomas A. Rogers, Municipal Bldg., Buffalo.

Engineers' Society of Pennsylvania—Secretary, E. R. Dasher, Box 704, Harrisburg, Pa.

Engineers' Society of Northeastern Pennsylvania—Secretary, H. S. Webb, 415 N. Washington Ave., Scranton, Pa.

Engineers' Society of Western Pennsylvania—Secretary, Elmer K. Hiles, 2511 Oliver Bldg., Pittsburgh, Pa.

Illinois Society of Engineers and Surveyors

—Secretary, E. E. R. Tratman, Wheaton, Ill.
Indiana Engineering Society—Secretary,
Chas. Brossmann, Indianapolis, Ind.

International Railway Congress Association—President (of the International Commission)—W. Toudelier, 11 Rue de Louvain, Brussels, Belgium; Secretary General, L. Welssenbruch, same address.

Iowa Engineering Society—Secretary-Treasurer, Prof. S. M. Woodward, Iowa City, Ia.

Louisiana Engineering Society—Secretary, Jas. M. Roberts, 132 Carondelet St., New Orleans, La.

Michigan Engineering Society—President, Miner C. Taft, Kalamazoo, Mich.; Secretary, Alba L. Holmes, Grand Rapids, Mich.

Montana Society of Engineers—President, John H. Klöpinger, Great Falls, Mont.; Secretary, Clinton H. Moore, Butte, Mont.

Ohio Engineering Society—President, E. G. Bradbury, New Haven Bldg., Columbus, O.; Secretary, Clyde J. Knisley, New Philadelphia, O.

Ohio Society of Mechanical, Electrical and Steam Engineers—Secretary-Treasurer, Frank E. Sanborn, Ohio State University, Columbus, O.

Rochester Engineering Society of Rochester—Secretary-Treasurer, Edw. F. Davison, 266 Lyell Ave., Rochester, N. Y.

Toledo Society of Engineers—President, L. M. Gram, 1047 Spitzer Bldg., Toledo, O.; Secretary, L. T. Owen, 1047 Spitzer Bldg., Toledo, O. Regular meeting second Friday in each month.

Utah Society of Engineers—Secretary, Fred D. Ulmer, Oregon Short Line, Salt Lake City, Utah. Third Friday of each month except July and August.

Vermont Society of Engineers—Secretary, Geo. A. Reed, Barre, Vt.

Western Society of Engineers—President, Albert Reichmann, 72 W. Adams St.; Secretary, J. H. Warder, 1735 Monadnock Blk., Chicago.

MECHANICAL AND TRADE SOCIETIES.

Air Brake Association—Secretary, F. M. Nellis, 53 State St., Boston, Mass.

American Boiler Manufacturers' Association—President, E. D. Meier, New York City; Secretary, J. D. Farasey, 37th St. and Erie Ry., Cleveland, O.

American Electric Railway Association—Secretary-Treasurer, H. C. Donecker, 29 W. 39th St., New York City.

American Electric Railway Manufacturers' Association—Secretary-Treasurer, H. G. McConaughy, 165 Broadway, New York City.

American Foundrymen's Association—Secretary, Richard Moldenke, Watchung, N. J.
American Institute of Metals—Secretary-Treasurer, W. M. Corse, care Lumen Bearing Co., Buffalo, N. Y.

American Railway Association—General Secretary, W. F. Allen, 75 Church St., New York City.

American Railway Bridge and Building Association—President, A. F. Killam, I. C. R. R., Moncton, N. B.; Secretary, C. M. Lichty, C. & N. W. Ry., Chicago.

American Railway Master Mechanics' Association—President, D. R. MacBain, L. S. & M. S. Ry., Cleveland, O.; Secretary, J. W. Taylor, Karpen Bldg., Chicago.

American Railway Tool Foremen's Association—Secretary-Treasurer, A. R. Davis, 750 Pine St., Macon, Ga.

Association of Maintenance Way Master Painters (United States and Canada)—President, J. S. Rice, L. S. & M. S. R. R., Elkhart, Ind.; Secretary, Harry J. Barkley, I. C. R. R., Carbondale, Ill.

Boiler Makers' Supply Men's Association—Secretary, Geo. Slate, The Boiler Maker, 17 Battery Pl., New York City.

Canadian Association of Stationary Engi-

neers—Secretary, W. A. Crockett, Mount Hamilton, Ont., Can.

Canadian Roadmasters' Association—Secretary, J. M. Mackenzie, West Toronto, Can.

Car Foremen's Association of Chicago—President, Geo. Thompson, L. S. & M. S. R. R., Chicago; Secretary, Aaron Kline, 841 N. 50th Ct., Chicago.

General Superintendents' Association of Chicago—Secretary, A. M. Hunter, 605 Grand Central Station, Chicago.

International Railroad Master Blacksmiths' Association—Secretary, A. L. Woodworth, C. H. & D. Ry., Lima, O.

International Railway Fuel Association—C. G. Hall, Secretary, 922 McCormick Bldg., Chicago.

International Railway General Foremen's Association—Secretary-Treasurer, Wm. Hall, C. & N. W. Ry., 829 W. Broadway, Winona, Minn.

International Union of Steam Engineers—President, Matt Comerford, 486 E. 8th St., Brooklyn, N. Y.; Secretary, Robert A. McKee, 606 Main St., Peoria, Ill.

Master Boiler Makers, Association—President, T. W. Lowe, G. B. I., C. P. R. R., 760 Westminster Ave., Winnipeg, Man.; Secretary, Harry D. Vought, 95 Liberty St., New York City.

Master Car Builders' Association—President, A. Stewart, S. M. P. & E. Southern Ry., Washington, D. C.; Secretary, J. W. Taylor, Karpen Bldg., Chicago, Ill.

Master Car and Locomotive Painters' Association—Secretary, A. P. Dane, B. & M. R. R., Reading, Mass.

Maintenance of Way Master Painters' Association—Secretary, T. I. Goodwin, C., R. I. & P., Eldon, Mo.

National Association of Stationary Engineers—Secretary, Fred W. Raven, 443 S. Dearborn St., Chicago, Ill.

National Founders' Association—Secretary, J. M. Taylor, Room 842, 29 S. La Salle St., Chicago, Ill.

National Railway Appliance Association—Secretary, Bruce V. Crandall, 537 S. Dearborn St., Chicago, Ill.

Railway Equipment Manufacturers' Travelling Engineers' Association—Secretary, W. L. Allison (Franklin Railway Supply Co.), Chicago, Ill.

Railway Signal Association—President, B. H. Mann, Mo. Pac. Ry., St. Louis, Mo.; Secretary, C. C. Rosenberg, Bethlehem, Pa.

Railway Storekeepers' Association—President, J. W. Gerber, O. S. K., Sou. R. R., Washington, D. C.; Secretary, J. P. Murphy, Box C, Collinwood, O.

Railway Supply Manufacturers' Association—Secretary, J. D. Conway, 2136 Oliver Bldg., Pittsburgh, Pa.

Roadmasters' and Maintenance of Way Association—Secretary-Treasurer, L. C. Ryan, C. & N. W. Ry., Sterling, Ill.

Supply Men's Association of American Boiler Manufacturers' Association of United States and Canada—President, J. T. Corbett (J. T. Ryerson & Son), Chicago; Secretary, F. B. Slocum (Continental Iron Works), Brooklyn, N. Y.

Traveling Engineers' Association—Secretary, W. O. Thompson, N. Y. C. Car Shops, East Buffalo, N. Y.

Judge: "Thirty days."

Prisoner: "Oh, please, don't send me to jail, your honor."

Judge: "Well, then, I'll make it thirty dollars. How's that?"

Prisoner: "Fine."—Buffalo Express.



"CLEVELAND" Bridge Reamers

will take heavy cuts and work under trying conditions

Always Dependable

The **CLEVELAND** Twist Drill Co.
New York CLEVELAND Chicago

NECESSITIES

High Grade Rubber Goods
Fire Hose
Reels, Nozzles
Fire Hose Carts
Rubber Cement
P. & W. Rubber Preservative
Rubber Boots
Leather-Soled Rubber Boots

Leather Belting
Upholsterer's Leather
Leather and Silk Fringes
Vestibule Diaphragms
Gimp
Brass Nails
Leather Head Nails

Signal Flags
Bunting
Linoleum
Cab Cushions
Cab Curtains
Track Jacks
Economy Soap Stock
Nut Locks

GUILFORD S. WOOD

Great Northern Building,

CHICAGO, ILLINOIS

BURKE ELECTRIC COMPANY

MAIN OFFICE AND WORKS

ERIE, PA.

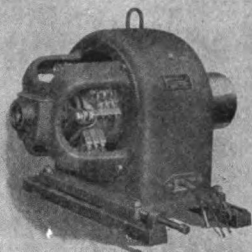
BULLETIN ON

JANUARY, 1912

Current Sheet, 107

DIRECT-CURRENT MOTORS AND GENERATORS

SEEN, U. S. TO 100 H. P.



TYPE 44 MOTOR WITH BALL AND PULLEY

Direct Current Motors

of robust characteristics are illustrated and described in this bulletin.

If you have not yet read about them, send for a free copy.

**BURKE
ELECTRIC
COMPANY**

ERIE,
PA.

BURKE ELECTRIC CO., Erie, Pa.
Please Send Bulletin 109-C

Name.....
Address.....

IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances
By THE IDEAL POWER PUBLISHING COMPANY
Fisher Building Chicago

Vol. 11.

MAY, 1914.

No. 1.

Why We Sell the Little Giant Truck

By W. E. ELDRIDGE
of the Little Giant Truck Co. of Boston

We are motor truck people here, and have been assembling and marketing heavy-duty trucks for five years. Before that, the writer had been an automobile man since 1901, and as a pioneer dealer brought the first Cadillac and the first Buick to New England.

We have been quite successful with our heavy-duty trucks, and in Greater Boston our vehicles are hauling more coal and more lumber than all other makes of motor trucks together. We have no dissatisfied customers, and all of our fifty-odd five and six-ton trucks are in the hands of the original purchasers.

It would seem that these statements have nothing to do with the subject of this little article, but we wish to show that we have had experience and success almost from the inception of the motor vehicle industry, and naturally view the truck proposition with the cold, calculating eye of the fellow who has been "through the mill."

During the past five years the matter of rounding out our line by taking on a light truck has come up again and again. We suppose that at one time or another we have been drummed by almost every other roadman in the truck business.

The writer in 1908 fitted up five two-

cylinder touring car chasses with delivery bodies, and put them at work in five different lines of business hauling on contract. This was done with a view of getting statistics on earning capacity, costs of operation and interruptions of service. These pleasure vehicle chasses were well built, simple and strong. We knew all about them because we had marketed and cared for over a thousand of this particular make. As good operators as we could get were hired, but we had our troubles. One day the entire five were hung up with various troubles, and we were 100 per cent out of business.

This experiment and later observations taught us two things in particular: first, that pleasure vehicle chasses, new or second-hand, made over into "trucks," do not stand up except over pneumatic tires; and even then not any too well; second, that trucking over pneumatic tires is nearly always prohibitive in cost.

From then on we kept looking into various light truck propositions as they came out. During the earlier stages, practically all such trucks were turned out by pleasure vehicle makers. Examination showed that these "trucks" were simply a convenient dumping ground for



A Little Giant Model H that delivers electric washing machines on the streets of Chicago and vicinity.

obsolete pleasure vehicle parts, and that the chasses were unsuitable for the advertised purposes. These practices are still prevalent, and are partly responsible for the just suspicion with which the motor truck industry is viewed by many earlier purchasers, who bought not wisely but too soon.

We have always had certain ideas about what the ideal light truck proposition should be.

In the first place, we cannot find any one who ever made any money trucking over pneumatic tires. Counting five tires to the set (four on the wheels and one spare), a one-ton truck running ten thousand miles per annum will chew up on the average three sets of five-inch shoes, or fifteen shoes in all, and twenty tubes. This makes a rubber tire bill of say \$750 per annum, or \$2.50 per work-

ing day. How is the owner going to get that back in addition to the other expenses? He isn't.

Next—a real truck should have a short wheel base. Long wheel base means wasted time and effort in getting in and out of tight places. When we cut the corners off our customer's fine but narrow driveway, he doesn't like it, and it's good business not to offend well-to-do patrons. Also, the longer the wheel base, the weaker the chassis.

Then, again, there should be proper weight distribution. This seems so obvious that no time or space will be taken here to show the folly of balancing the pay load over the rear axle. The increase of tire cost alone is enough to condemn this practice.

A rear axle should be solid—not split. Driving gears and differentials should



A Model H Little Giant Auto Truck hauling a "Chicago Pneumatic" Portable Gasoline Engine Driven Air Compressor (weight 8700 pounds). Two of the latest products of the Chicago Pneumatic Tool Co.

be OVER the springs, not under. This, too, is axiomatic.

If people are to find trucks profitable, the investment must not be prohibitive. The price must be RIGHT. We can't figure anything in the performance of the average one-ton truck that justifies paying \$2,000 for it. Neither do we see anything but loss and exasperation ahead for the man who tries to turn a second (or third) hand pleasure car into a "truck," or who buys a too cheap new one; \$1,350 is about right for a good one-ton chassis. There is no sense in paying more, and little in spending less.

The editor said eight hundred words for this effusion, and the writer's pen is running away from him.

To wind up, we think that in addition to the above factors, a truck agent, to be permanently successful, must be backed up by a maker large enough and strong enough to keep out of the sheriff's hands, and who will continuously co-operate with agents.

And then—that ADVERTISING campaign.

If any of the readers of "Ideal Power" are considering a truck agency, and

feel that the writer has not made out a clean case for the "LITTLE GIANT" truck as against all comers of like carrying capacity, there are further numerous minor reasons why we took it on, which any one can have by mail for the asking.

We are IN RIGHT.

Brudder Brown Gets Careless.

A colored parson, calling upon one of his flock, found the object of his visit out in the back yard working among his hen-coops. He noticed with surprise that there were no chickens.

"Why, Brudder Brown," he asked, "whar'r all yo chickens?"

"Huh," grunted Brother Brown without looking up, "some fool niggah lef' de do' open an' dey all went home."

Not Yet.

"You're a pretty old man to be begging," said the lady to the man at the back door.

"Yes, ma'am," replied the man with his hat in his hand.

"Have you been begging all your life?"

"Not yit, ma'am."



Bear Traps and Duntley Electric Drills

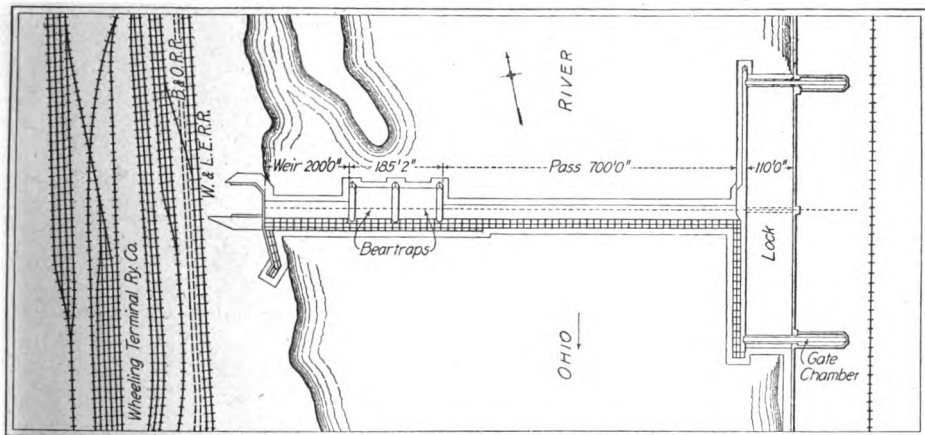
The photograph reproduced above was recently taken at the yards of the Penin Bridge Co., at Beaver Falls, Pa., and shows a number of 3x Duntley Electric Reamers at work on the Bear Trap, for Dam No. 10 of the Ohio River Lock and Dam Improvement now under way. On this particular job there were 14,000 holes to be reamed from 11/16 to 13/16 inch through two plates, and one angle, making a total thickness of 1 1/4 inches. The bear traps used on Lock and Dam 12 of the Ohio River improvement is similar in construction, and is thus described in the Engineering Record of Feb. 7.

Lock and Dam 12 of the Ohio River improvement below Pittsburgh are low concrete structures built by the U. S. Government to improve the navigation of the river. The river bed consists of sand and gravel about 20 ft. deep, overlying approximately level shale rock, and the river has a low-water depth of 2 to 9 ft.,

with sloping banks from 50 to 60 ft. in height. The construction involves a large amount of pile-driving, concreting and pumping and has been carried on in sheet-pile and gravel cofferdams, high enough to exclude ordinary stages of water. They have been subjected to very high floods and have withstood repeated submersion. They have also successfully resisted impact and pressure from large amounts of drift and ice and have enabled the site to be pumped dry except in high floods.

General Design.

The dam crosses the river at Martin's Ferry nearly at right angles, and with the locks forms a continuous concrete structure, T-shape in plan. A power house is built at the intersection of the lock and dam, and both lock and dam masonry rests on foundation piles driven to rock. The dam is 1120 ft. long, including a



Map showing location of Bear Traps.

700-ft. navigable pass, two 91-ft. bear-trap sections, three bear-trap weirs, and a 200-ft. weir with end abutment on shore. The pass has a concrete bottom slab 35 ft. wide, 5 ft. deep and 3 ft. in the clear below low-water level. It serves as a floor on which are installed Chanoine wickets 11 ft. high.

The 110x600-ft. lock is at right angles to the dam and is adjacent and parallel to the east bank of the river. The river wall is about $23\frac{1}{2}$ ft. high and the shore wall about $25\frac{1}{2}$ ft. high. The steel gates slide horizontally at right angles to the locks into concrete chambers constructed in the river banks. The face of the river wall is protected by rock-filled cribs and riprap, and the shore wall retains a backfill supporting the concrete pavement of an esplanade.

The floor of the lock is paved with 6x8-ft. concrete blocks 18 in. thick, cast in place. The shore wall of the lock is extended about 600 ft. upstream, and downstream, from the gates to form guide walls, on pile foundations. The upper guide wall is 11 ft. wide at the base and 5 ft. wide at the top, with a height of 24.4 ft. and top of wall 5 ft. above upper pool level. The lower guide wall is 9 ft. 6 in. wide at the base and 5 ft. wide at the top, with a vertical height of 21 ft. The top of the wall is 6 ft. above lower pool level.

The Trials of a Service Garage Manager.

Anyone who thinks that running a service garage in a big city is a synonym for pleasant dreams has another think coming; for there is no better place to jostle elbows with human nature in unusual and peculiar forms than in a truck repair palace.

To some people the turning of a wheel on an axle is a most mysterious phenomenon. They stand in reverent awe of anything mechanical. The use of monkey wrench or lubricating oil calls for mental and mechanical science far beyond their grasp, and as for grey matter, well they may have some somewhere, but not in their heads.

These may be the wild theories of a soreheaded service garage manager, and yet when you consider the things he goes up against, he is to be forgiven for having a pessimistic vein or two in his make-up.

Below are some extracts from a service garage manager's note-book:

Here is one instance:

"Last week one of our customers changed his drivers, so he got one of his shop help and put him on the car for a week with the old driver. After getting instructions for a week he was sent out alone with the car. The second day he was out he came into the service department all out of breath, as he had his car standing about three-quarters of a



A Little Giant in Roanoke, Va., with "some" load.

mile from the garage, and told us that there was something wrong, as he could not run the car or shut off the motor. He stopped in the center of the road and a policeman was about to arrest him for letting his motor run while he was out of the car. He told the policeman that there was something wrong with the car, that he could not shut off the motor nor get the car to the curb stone; so the policeman and the driver pushed the car to the curb stone and he ran all that distance and told us to go and look at his car.

"He could not move the car, as he had sheared off a jackshaft key and there was no trouble with the motor. The reason that he could not stop it was that he had been running on battery, and in order to shut it off he ran it on magneto. Consequently the motor would not stop, as he was running it on battery and switching it on magneto. He evidently had been running that day and

the day before on battery alone, unconscious of his ignorance.

"That same night he drove into our garage and could not get up the incline. I happened to be near the door and noticed that his emergency brake was on. I told him to release the brake, and he said he had been trying to do this all the way down, but it would not go and showed me how he tried to release it, which was nothing more than trying to put down the high speed lever while the emergency brake was on. He evidently had been running on low speed for some time and at the same time had the brake applied."

These are only a few samples of human stupidity that service garage managers come in contact with.

Anyone wishing to contribute similar experiences will kindly address the editor. From time to time we shall publish these stories for the good of the cause.



Hauling garbage in Washington, D. C. The novel spectacle of a Little Giant Truck (1-ton rated capacity), itself loaded to the guards, hauling two loaded trailers.

Motor Trucks for Country Stores.

"Yes, I think we can please you; we have the largest assortment of furniture in the city."

"Well, we'll look at what you have. We are just looking today. We haven't quite decided to buy just yet, you know."

"Where are you living?"

"We live seven miles in the country. We have just built a new house on a small farm there and we sort o' thought we would like to have some new things, but I don't know whether we'll buy or not."

"I shall be glad to show you what we have, and if you do decide to buy anything we'll deliver it to your home for you without extra charge."

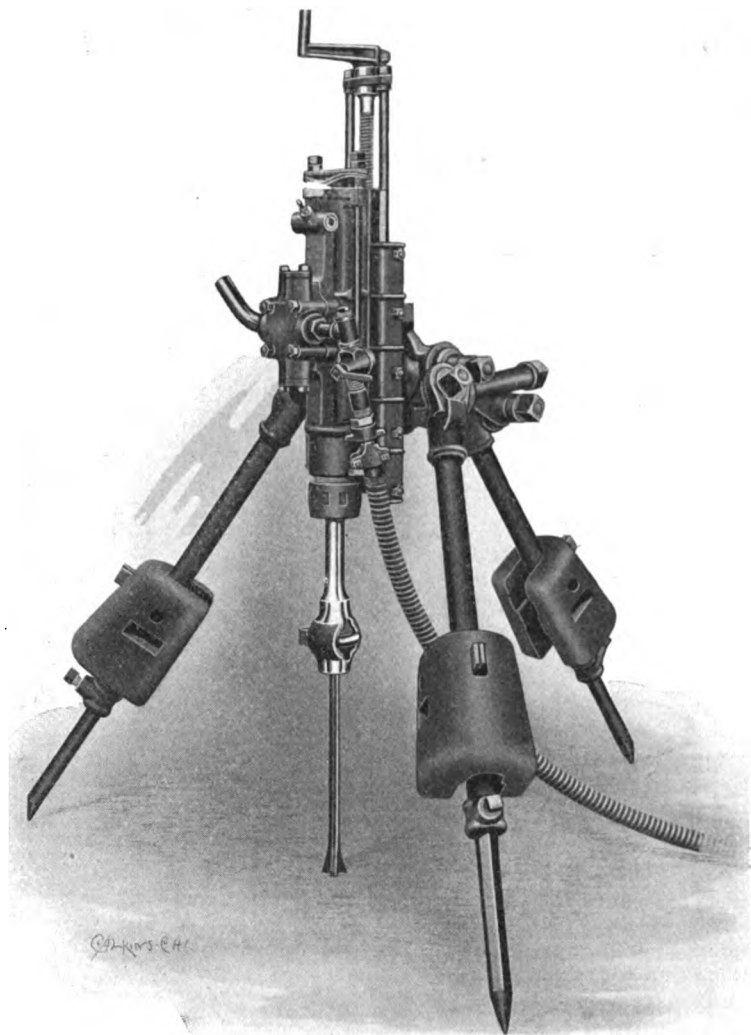
"Oh, you will?"

"Yes, we make a practice of delivering everything purchased here, no matter where the customer lives."

That settled the question, and the couple bought \$200 worth of furniture, says the Furniture Journal. Persons from the country usually hesitate about buying much furniture because, for some reason or other, they seem to think it

rather a task to get it home in good condition. The auto has made it possible to get all of this doubtful country trade, because in just about the same time it would take to make a city delivery with a horse, the country delivery is made.

If those same goods had to be shipped by train to their town they would not buy so many articles, and the dealer would have to spend much more in time and freight charges than the cost of delivering by automobile. Where it has been found that it costs as much to maintain the truck as it did to care for one team of horses, the truck has increased the business and does so much more work that the services of one man have been dispensed with. Persons seeing an attractive looking truck going about the streets and the country roads remember the name of the store and go there when they are interested in furniture, for everyone likes to deal with a progressive man. The progressive spirit is apparent inside every such store as well. The driving of the truck has had a psychological effect upon the owner.



"Chicago Slogger" Drill.

The "Chicago Slogger" Drill.

The "Chicago Slogger" Drill possesses a "punch" and it delivers or gets it across some 400 times a minute. It is a real hard punch, too, one that leaves its impression on the rock every time and yet doesn't hurt the drill. And it is a punch that adapts itself to and is just as effective in the softer rocks as in the hard rocks. That is why it is such a good driller and so popular.

Not only is the "Chicago Slogger" Drill a hard hitting drill, but it is also

a very rapid striking drill. The weight of the blow and the rapidity with which each blow is delivered make it the fast drilling machine users proclaim it to be regardless of the hardness of the rock. But that is what it was designed for, that is, to be a fast driller under all sorts of conditions.

The design of the "Chicago Slogger" Drill is just right and is the result of over twenty-five years' practical experience in all parts of the world. The improved valve motion, the adjustable

shell, the novel method of lubrication, the release rotation, the bushed front head with taper sleeve and the chuck for taking unshanked steels are only a few of the special features that account for it being such a rapid driller.

No better material or workmanship can be desired than is found in the "Chicago Slogger" Drill. Every piece of material has been tested for strength and long wear, and found to be the best for the purpose. The operations in manufacture are the latest standard practice, and the workmanship is consequently of the best. Of course it costs considerable to insure this, but the guarantee under which every sale is made makes it necessary.

Being manufactured on a large scale, the parts that go to make up a "Chicago Slogger" Drill must necessarily be made to the thousandth of an inch to insure interchangeability. And the system of inspection is a most rigid and severe one. An imperfect piece cannot possibly escape rejection, and this applies to the material and treatment of the piece as well as to the workmanship on it. Absolute accuracy is insisted on.

Because designed right and so well made, the "Chicago Slogger" Drill has proven itself very cheap to maintain and operate. The improved valve motion insures low air consumption, and the high-grade special materials used, and the great care taken in their manufacture account for the small "upkeep" costs under the severest hard rock conditions.

The "Chicago Slogger" Drill permits of a variable stroke when collaring a hole. This is a great advantage and usually a necessity, as it permits setting up and starting a hole regardless of the angle at which the face of the rock slopes. It is also a great advantage when drilling in broken or shattered ground, or when drilling across a seam.

The "Chicago Slogger" Drill is a good "mudder," because it has the right sort of "pull back" power. It clears the bottom of the hole being drilled of the cuttings, which permits of a clean ringing blow against the rock, and accounts in

a measure for the fast drilling records made by it.

The "Chicago Slogger" Drill is built in four sizes, having $2\frac{3}{4}$ -inch, 3-inch, $3\frac{1}{4}$ -inch and $3\frac{3}{8}$ -inch diameter cylinders, which allows for a large range of variation in conditions. And each size is just right for the work it is sold for. Neither too heavy nor too light. And they are made for use with either steam or air and mounted on either tripods or columns.

And that is why every "Chicago Slogger" Drill carries with it the hard and fast guarantee of the Chicago Pneumatic Tool Company that it will drill a greater footage at a lower cost for power and repairs than any other drill of equal size, and operating under the same conditions.

Bulletin 151 issued by the Chicago Pneumatic Tool Co., describes in detail the construction and operation of this drill and will be sent on request to those interested.

Complete List of all Boiler, Tank and Stack Manufacturers in U. S. and Canada.

"Manufacturers of tools and materials used by boiler manufacturers wishing to reach over 900 shops in the United States and Canada, manufacturing boilers, tanks and stacks and fabricators of plate steel, should send check for Three Dollars (\$3.00) to F. B. Slocum, Secy., Supplymen's Association, West & Calyer Sts., Brooklyn, N. Y., for a registered copy of the above mentioned book. These lists are also advantageous to salesmen visiting the trade."

The Cleveland Twist Drill Company Will Send You Drill Chips Free.

Under the modest name of "Drill Chips" the Cleveland Twist Drill Company is issuing monthly a bright, snappy house organ which is sent free to any one interested in drills, reamers, or similar tools. It is edited by Andrew E. Coburn, Advertising Manager.

IDEAL POWER

PUBLISHED MONTHLY
In the Interest of Compressed Air
and Electrical Appliances

BY THE
IDEAL POWER PUBLISHING CO.
1014 Fisher Building
CHICAGO, U. S. A.

C. I. HENRIKSON Editor

Vol. 11. MAY, 1914. No. 1.

TERMS OF SUBSCRIPTION
United States, Canada and Mexico, 25 cents per year
Other Countries in Postal Union, 50 cents per year

ADVERTISING RATES ON APPLICATION
Send 25 cents and have your name put on our
subscription list.

Our Motor Truck Department.

The Motor Truck Department of the Chicago Pneumatic Tool Company has grown from the baby of the organization to its second largest department in the comparatively short period of four years.

The "Little Giant" is now firmly established here and abroad being in use in the Dominion of Canada, England, Germany, Italy, Russia, South Africa, Australia, Japan, Hawaii, Cuba and Porto Rico as well as every state in the Union so it is readily perceived that it has become quite an institution throughout the civilized world and it can truthfully be said "The sun never sets on the Little Giant." The Chicago Pneumatic Tool Company has developed from an unknown quantity in the field of commercial vehicle manufacture to the largest manufacturer of one ton motor trucks exclusively, and the fourth largest manufacturer of motor trucks in the United States, regardless of capacity. Needless to say such strides as this could never have been made were it not for the almost boundless resources of the company and a corps of skilled engineers, unequalled in any organization of its kind.

Up to almost a year ago our efforts had been confined to the manufacture and sale of a two cylinder truck, which has met with universal success. During the previous year, however, work had been quietly going on on a

four cylinder car and after months of careful thought and many conferences by our engineers, the model car was completed and put in daily service at our factory as a shop car where it was used for just a year and tried out thoroughly in actual usage under all conditions of load, road and weather. It was then dismantled and thoroughly inspected by the engineering staff who after a few slight changes in the minor details, announced that the new "Little Giant" was then ready for manufacture. Plans were immediately laid to proceed with the manufacture and an extensive advertising campaign was engaged in, and from the first announcement to the truck buying public of the new four cylinder Model "H" "Little Giant" one-ton truck, a flood of inquiries resulted, in such proportions as to cause the Motor Sales Department many a weary hour to keep apace with them and give them the prompt and thorough attention it has always been our aim to afford those interested in any way in any of our products. Each mail brings in its quota of inquiries indicating that the new "Little Giant" has made an unprecedented appeal to the motor-wise business man.

Since the shipment of our first four cylinder model our selling organization has been increased over 70% by the acquisition of new dealers who were quick to perceive the value offered in a car as sturdily and thoroughly built as the "Little Giant" backed by an organization such as ours, and still offered for sale at the phenomenally low price of \$1,350.00.

The sales of Little Giants during the month of January, recognized as one of the worst months of the year in the automobile industry, was the largest month we have ever enjoyed from a sales standpoint, and February and March followed with greater sales due to the near approach of the Spring season and April bids fair to outstrip all previous records.

Our factory is now pushed almost to the limit and if present conditions continue, and there is every indication that they will, it will necessitate putting on

a night shift in order to keep up with the demand.

Judging from all signs, before the end of the season, it will be a mighty small town that cannot boast of a "Little Giant" delivering merchandise for some progressive merchant within its confines.

New Agency in Baltimore.

The Baltimore News thus announces the appointment of a new Little Giant Truck agency in that city:

"Announcement was made yesterday that the Little Giant Sales Company had taken the agency for the Little Giant one-ton truck, which is made and distributed by the Chicago Pneumatic Tool Company. E. H. Habersham is president and general manager of the Little Giant Sales Company, whose offices and service station are at 1223-1225 Park avenue, near Lanvale street. Mr. Habersham was at one time Washington branch manager for the Studebaker Corporation of Detroit, Mich., and was also sales manager of the Colonial Motor Company of this city.

Mr. Habersham declared today that the Little Giant Sales Company would handle motor trucks exclusively, and would not carry a line of pleasure cars. Mr. Habersham says the motto of the Little Giant Sales Company will be "Service," and service will be uppermost in the minds of him and his sales force when a Little Giant is sold. A big consignment of parts for repairs and replacements has been made the local Little Giant distributor.

The Chicago Pneumatic Tool Company concentrates on one model truck. The company believes that this policy enables them to buy raw stock and parts in large quantities on a most economical basis. Little Giant trucks are guaranteed for one year, and this guarantee is declared to be backed by more than \$11,000,000 of capital and surplus and nineteen years of business that has resulted in bringing to their books many millions of dollars of business each year and more than 22,000 active customers."

The Baseball Bug Gets the Little Giants

Under the management of Henry M. Tufo, the "Little Giants" of the Chicago Pneumatic Tool Co., have again reorganized for the base ball season of 1914 with the following line-up:

Olson C.
Burns P
Hamilton 1st.
Lovejoy 2nd.
J. Ostrom s. s.
W. Ostrom 3rd.
Hager L. F.
Roy Beardsley C. F.
Donofrio R. F.

Games will be played Saturday afternoons, the season opening May 2nd and extending until Aug. 29. The "Little Giants" are members of the Chicago Manufacturers Baseball League, consisting of teams from the following five companies:

Selz Schwab Co.
R. R. Donnelley & Sons.
Quaker Oats Co.
Western Shade Cloth Co.
Chicago Pneumatic Tool Co.

At the reorganization meeting of the league held at the Windsor-Clifton Hotel recently, Henry M. Tufo was elected president, R. G. Dennis, vice president, and Geo. Bures, secretary-treasurer. A constitution was adopted and a committee appointed to secure playing grounds and draw up a schedule. Three more clubs will probably be admitted to the league to make it an eight club organization.

Announcement.

The Corby Supply Company, the Southwestern representatives of the Chicago Pneumatic Tool Company, has opened an office in Kansas City, Mo., in charge of Mr. C. A. De Haven.

Mr. De Haven has a wide acquaintance in Kansas City and the surrounding towns, having at one time been master mechanic of the Midland Valley Railroad, and more recently—during the past eight years—being identified with the portable electric tool business.

He is to cover Kansas City, St. Joseph, Leavenworth and Atchison.



A Little Giant in the Service of Ashtabula Telephone Co.

The Knock of Opportunity.

Any bright little inventor who applies a silencer to pneumatic riveting machines will have a bright future before him.

Notice.

On April 15th, 1914, our tool repair and shipping department was removed to 239 West 50th Street, New York. Telephone, 1808 Columbus.

Pneumatic or electric tools for repairs should be sent to that address.

CHICAGO PNEUMATIC TOOL CO.,

Office: 50 Church Street.

Telephone, 5050 Cortlandt.

A man from the city went to a small country town to spend his vacation. At the station he took the stage, which was drawn by two dilapidated horses, and found that he had no smaller bill than a five-dollar one, which he handed to the driver.

The driver looked at it for a moment or so, and then said, "Which horse do you want?"

Little Giant Reduces Trucking Expense to a Frazzle.

Cutting delivery expense from ninety dollars (\$90.00) per month to nineteen dollars (\$19.00) per month is the enviable accomplishment of a Little Giant truck in the service of the Ashtabula Telephone Co., Ashtabula, Ohio. These figures are based on a year's performance, during which time the truck has given the best of service, without any trouble or interruption.

The Sins of the Father.

Tommy came home from school very morose.

"Well, my son," observed his father cheerfully, "how did you get on at school today?"

Tommy said that he had been whipped and kept in.

"It was because you told me the wrong answer," he added. "Last night I asked you how much was a million dollars, and you said it 'was a hell of a lot.' That isn't the right answer."



Incident at the Grand Prize Race, Santa Monica, Cal.

The Race at Santa Monica.

Two hundred thousand people saw three Little Giant trucks used as service cars at the Stutz pits for Anderson & Cooper at the Grand Prize race, Santa Monica, Cal., a few weeks ago. There is nothing spectacular about the Little Giant truck, for it is essentially a creature of service, and on this occasion the service consisted of nothing more exciting than carrying the tires and the gasoline for the Stutz cars. But during the race an accident occurred to the Sunbeam car which sent the cold shivers down the spines of the sport lovers, and a Johnny-on-the-spot photographer was able to catch it just as the car turned over. We were fortunate to secure the photo which we reproduce above. Our correspondent does not say how badly the car or its drivers were injured.

Memories of the Zoo.

"What is the fare to Pretoria, please?"

"Five shillings—I've told you that eight times now."

"I know you have, but little Willie here likes to see you come to the window. He says it reminds him of the Zoo."

The Real Thing.

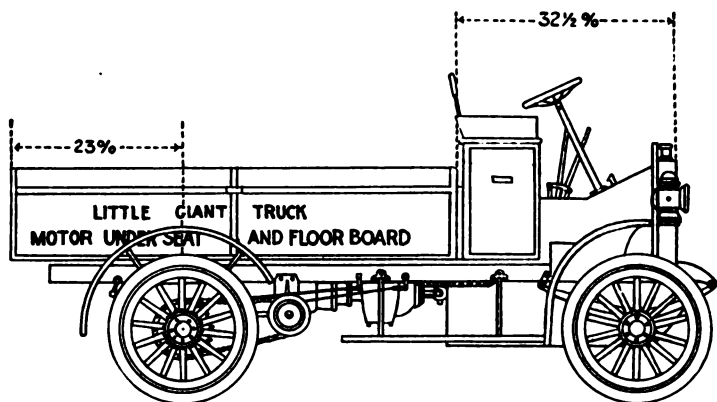
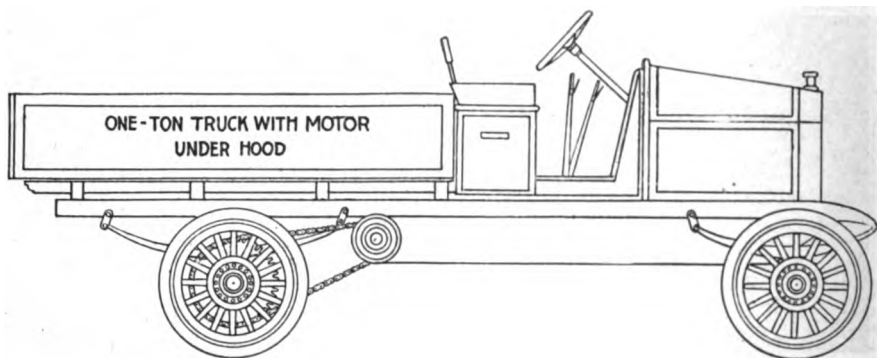
The cub reporter saw a hearse start away from a house at the head of a funeral procession.

"Who's dead?" he inquired of the corner storekeeper, who was standing near his door, gazing at the conveyances.

"Chon Schmidt."

"John Smith!" exclaimed the cub. "You don't mean to say John Smith is dead?"

"Vell, py golly," said the grocer, "vot you dink dey doing mit him—practicing?"



How the Load Distribution in the Little Giant Saves Tires.

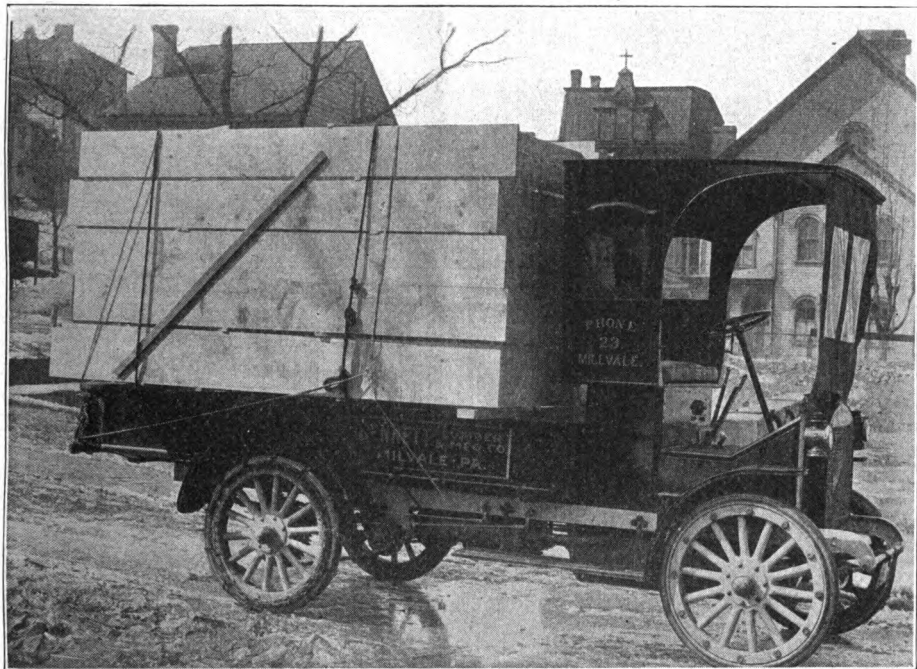
The engine of the Little Giant Car is located under the seat and footboards for the purpose of following out standard wagon practice and load distribution. The total weight of the Model "H" Chassis, stripped of body, is 3,080 pounds; weight on the front tires, 1,000 pounds; on the rear tires, 2,080 pounds. Percentage of load carried on front tires, $26\frac{1}{2}$ per cent; on rear tires, $73\frac{1}{2}$ per cent when loaded. The weight carried on the rear axle when car is empty, $66\frac{1}{2}$ per cent. This construction enables the fitting of the car with the large loading space, or in other words, with body 44 inches wide or wider, 114 inches in length back of the seat with only a 12-inch overhang over the rear of the chassis frame, thus permitting the scientific loading of the car, insuring economical tire mileage. The engine mount-

ed as indicated and the car fitted with removable pressed steel panels, enables any one to have access to all parts of the engine that it is desirable for drivers to reach, or to be reached by any one under ordinary conditions.

Short wheel base permits the turning of the car in much narrower streets without having to back up; the Little Giant being turned in a thirty-five-foot circle, therefore, it is more easily handled in narrow streets and alleys and congested traffic districts.

That short wheel base and proper load distribution mean tire economy is evidenced by the following report on a Model "H" Little Giant sold to Mr. J. C. Kubias of Redlands, Cal., by H. L. Miller, Pacific Coast distributor, located at Los Angeles.

"I took particular pains," says Mr. Miller, "to see how the tires were standing upon this car, and found this car had



Model "H" Little Giant Truck in the service of the Bennett Lumber and Manufacturing Company, Millvale, Pa.

run 5,200 miles, and $\frac{3}{8}$ inch of the rubber was worn off all four tires even, which is 21 per cent of the rubber, providing a tire could be worn down to the edge of the steel rim. At this rate, if the tires do not cleave they will stand up for 15,000 miles. I have also examined the last car sold to the American Union Fish Co. The tires on this truck are worn about the same amount in city use.

About a month after they bought this truck, they purchased a truck, which has worked at the side of our Model "H," and as you know the ——— is an overhang car, but has small wheels and large tires, and they have now nearly worn out their second set of tires on the rear wheels. At this rate, I would estimate that the tire bills on an overhang truck would cost fully \$150 more per annum to run than our $3\frac{1}{2}$ -inch tires on the Model "H."

Mr. Kubias himself has something to say about his truck: "November 20th I purchased from you a Model "H" Little Giant Truck. This truck has been in

hard and continuous service ever since. I use this truck to haul in all of the olives I handle from the groves situated within a radius of 25 miles. Our roads are nearly all rough, mountainous; very crooked and very steep grades. Every day we are compelled to make grades varying from 10 per cent to 18 per cent, with full capacity loads, and we have found this truck always dependable. She is certainly a 'Little Daisy,' and we consider ourselves extremely fortunate in getting such value for our money.

"For an all-round truck for country service, as well as city service, where time and economy are essentials, this Little Giant Model 'H' Truck has them all distanced. It is better than most trucks of double the cost. At an early date I expect to purchase a second Model 'H.'"

The load distribution in the Little Giant and its short wheel base spell tire economy and the success of this truck is due largely to this feature of its design.



This is a view through one of the three naves of Machinery Hall, World's Panama Pacific International Exposition, San Francisco, which has recently been completed. Approximately 8,000,000 feet of lumber was

used in its construction, and twenty-two Little Giant Wood Boring machines were kept busy boring the holes and screwing in the nuts. About 1,500 tons of bolts, rods, plates, etc., were used. W. W. Anderson & Co. were the contractors.



“Chicago Pneumatic” Portable Gasoline Driven Air Compressor and Chicago Hand Drill in the service of the Soracl Contracting Co., New York City, laying pipe lines for water service at 172nd Street and Concourse, New York City.

What a Little Giant Truck Is Doing in Missouri.

Henry M. Goode, manager of Jess & Sturdy Mfg. Co., Springfield, Mo., agents for the Little Giant truck in that vicinity, sends in the following data on the performance of a Little Giant in that territory:

From.	To.	Load.	Miles traveled, approx- imately.	Time.	Gasoline used.
Springfield, Mo...	Ozark, Mo., and return.....	1,200 lbs.	33	2½ hrs.	2½ gals.
Springfield, Mo...	Fair Grove, Mo., and 5 miles beyond and return	1,200 lbs.	54	3 hrs.	5 gals.
Springfield, Mo...	Brookline, Mo., and return.....	1,100 lbs.	24	1½ hrs.	2 gals.
Springfield, Mo...	Bois d'Arc, Mo., and return.....	1,100 lbs.	28	2 hrs.	2½ gals.

On return trips load was 300 to 400 lbs.

This truck has traveled approximately one mile, picked up a load of 1,800 lbs. and returned to starting point in 20 minutes. It has backed up a grade of at least 20 per cent with a load of approximately 3,500 lbs.

A Trick of the Trade.

“Stop!” thundered the client at the barber, who was cutting his hair. Then, he continued, in somewhat milder tones:

“Why do you insist upon telling me these horrible, blood-curdling stories of ghosts and robbers while you are cutting my hair?”

“I’m very sorry, sir,” replied the barber, but, you see, when I tell stories like

that to my clients their hair stands on end and it makes it ever so much easier to cut.”

Meditations of a Squab.

Forty door-bells, one promise;
Twenty promises, one call;
Ten calls, one sale;
Four sales, one job.
Lovely!

A Friend.

A friend is a person who is "for you" always, under any circumstances.

He never investigates you.

When charges are made against you he does not ask proof. He asks the accuser to clear out.

He likes you just as you are. He does not want to alter you.

Whatever kind of coat you are wearing suits him. Whether you have on a dress suit or a hickory shirt with no collar, he thinks it's fine.

He likes your moods and enjoys your pessimism as much as your optimism.

He likes your success. And your failure endears you to him the more.

He is better than a lover because he is never jealous.

He wants nothing from you except that you be yourself.

He is the one being with whom you can feel safe. With him you can utter your heart, its badness and its goodness. You don't have to be careful.

There are many faithful wives and husbands; there are few faithful friends.

Friendship is the most admirable, amazing and rare article among human beings.

Anybody can stand by you when you are right; a friend stands by you even when you are wrong.

The highest known form of friendship is that of a dog to his master. You are in luck if you can find one man or woman on earth that has that kind of affection for you and fidelity to you.

Like the shade of a great tree in the noonday heat, is a friend.

Like the home port, with your country's flag flying, after long journeys, is a friend.

A friend is an impregnable citadel of refuge in the strife of existence.

It is he who keeps alive your faith in human nature, that makes you believe it is a good universe.

He is the antidote to despair, the elixir of hope, the tonic of depression, the medicine to cure suicide.

When you are vigorous and spirited you like to take your pleasures with

him; when you are in trouble you want to tell him; when you are dying you want him near.

You give to him without reluctance and borrow from him without embarrassment.

If you live fifty years and find one absolute friend you are fortunate.—Selected.

Pan America.

Mexico has an area of 767,000 square miles, more than one-fifth of United States.

Brazil exceeds the area of the United States proper by about 200,000 square miles.

Argentina has a climate similar to the United States, and is as large as all of the country east of the Mississippi river plus the first tier of states west of it.

Bolivia is six times larger than New York, New Jersey, Pennsylvania and Delaware.

Four Nebraskas could be put into Chile. Peru is larger than California, Oregon, Washington, Nevada, Arizona, Utah and Idaho.

Paraguay is four times larger than the state of Indiana.

Uruguay is larger than North Dakota.

Venezuela is as large as Texas, Kentucky and Tennessee.

Ecuador is as large as New England, New York and New Jersey.

Colombia has an area as large as Germany, France, Holland and Belgium combined.

Real Hades.

"What's doing in the way of amusements?" asked the newcomer of the old inhabitant of Hades.

"Baseball game every afternoon," answers the old inhabitant.

"Baseball? You don't mean it! That's great! I was a fan from 'way back on earth. On the square, do you have baseball every day?"

"Sure thing."

"By ginger! This place suits me. Baseball! Say, this can't be hell, then?"

"Yes, it is. The home team always loses."



Ever notice how cute a fat woman is?

Cats and candidates love to roost on the fence.

Silence is golden, yet some people won't shut up.

The more the big fellows want the less we little chaps seem to get.

A homely girl can say that pretty things are useless, and mean it.

There is no demand for gold bricks, yet they always find a market.

The morning after is an occasion many a man would be glad to disremember.

A woman's new hat brings more satisfaction to her milliner than to her own husband.

A man doesn't worry because he isn't clever, provided he knows that he's good looking.

Now a scientist comes forward with the theory that red hair keeps a woman's temper hot. Old stuff!

It would surprise the late lamented if he could hear his widow telling her second husband what a noble, kind and generous man the first was.

Nothing jolts an egotist so successfully as being ignored.

Who wouldn't fall short if measured by the golden rule?

Generally speaking, charity is more of a fad than an obsession.

Most of us can't even do our duty without making a fuss about it.

Men who pose as judges of human nature get a good many hard bumps.

He's a fool man who thinks that he can please all his wife's relations.

Some women can smile in the face of adversity just as if they meant it.

If a baby is homely the mother is willing to admit that it looks like her husband.

Many a girl catches the man she wants by pretending to desire some man she doesn't want.

There's only one thing a woman loves better than to be told a secret, and that is to find it out for herself.

The chap who keeps everlastingly at it accomplishes a lot of things that are not necessarily worth the effort.

It's all right to pray for the things you want, but it is advisable to do a little hustling for the things you **must** have.

Chicago Pneumatic Tool Company

ILLUSTRATION NO. 130 PUBLISHED 1911

Hand Drills and Portable Compressors



Chicago Valves and Hand Drills

CHICAGO PNEUMATIC TOOL COMPANY

FISHER BUILDING CHICAGO 50 CHURCH STREET NEW YORK

CHICAGO PNEUMATIC TOOL COMPANY

ILLUSTRATION NO. 131 PUBLISHED 1911

Chicago Portable Mine Hoist



CHICAGO PNEUMATIC TOOL COMPANY

FISHER BUILDING CHICAGO 50 CHURCH STREET NEW YORK

CHICAGO PNEUMATIC TOOL COMPANY

ILLUSTRATION NO. 132 PUBLISHED 1911

Chicago Coal Drills



CHICAGO PNEUMATIC TOOL COMPANY

FISHER BUILDING CHICAGO 50 CHURCH STREET NEW YORK

CHICAGO PNEUMATIC TOOL COMPANY

ILLUSTRATION NO. 133 PUBLISHED 1911

"Chicago Slogger" Drills



CHICAGO PNEUMATIC TOOL COMPANY

FISHER BUILDING CHICAGO 50 CHURCH STREET NEW YORK

Order these bulletins by number, please:

ROCK DRILLS AND HAND DRILLS

- 148. Chicago Valveless Hand Drills.
- 149. Chicago Portable Mine Hoist.
- 150. Chicago Coal Drills.
- 151. Chicago Slogger Rock Drills.
- 152. Chicago Gatling Drills.
- 153. Chicago Sinker.
- 154. Chicago Stoper.
- 172. Chicago Plug and Feather Drill.

Address

CHICAGO PNEUMATIC TOOL CO.,

1014 Fisher Bldg., Chicago

50 Church St., New York

Branches Everywhere

CHICAGO PNEUMATIC TOOL COMPANY

ILLUSTRATION NO. 134 PUBLISHED 1911

"Chicago Gatling" Drills



CHICAGO PNEUMATIC TOOL COMPANY

FISHER BUILDING CHICAGO 50 CHURCH STREET NEW YORK

CHICAGO PNEUMATIC TOOL COMPANY

ILLUSTRATION NO. 135 PUBLISHED 1911

The "Chicago Sinker"



CHICAGO PNEUMATIC TOOL COMPANY

FISHER BUILDING CHICAGO 50 CHURCH STREET NEW YORK

CHICAGO PNEUMATIC TOOL COMPANY

ILLUSTRATION NO. 136 PUBLISHED 1911

The "Chicago Stoper"



CHICAGO PNEUMATIC TOOL COMPANY

FISHER BUILDING CHICAGO 50 CHURCH STREET NEW YORK

CHICAGO PNEUMATIC TOOL COMPANY

ILLUSTRATION NO. 137 PUBLISHED 1911

No. 5 Chicago Plug and Feather Drill

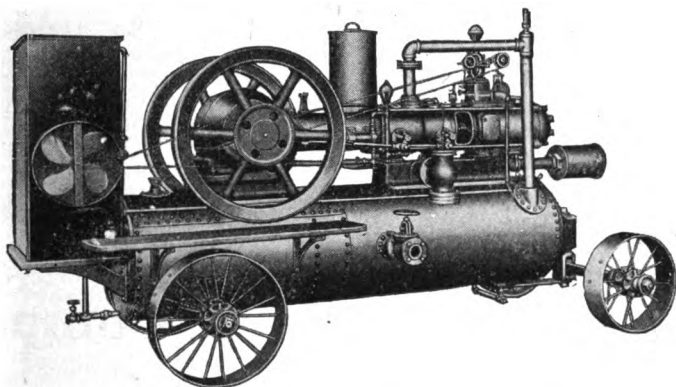


CHICAGO PNEUMATIC TOOL COMPANY

FISHER BUILDING CHICAGO 50 CHURCH STREET NEW YORK

Don't Deprive Yourself of the Advantages of Compressed Air Because it is a "Field" Job

Get a "Chicago Pneumatic" Portable Gasoline Compressor, bring it to the work and keep your rock drills and pneumatic tools busy where compressed air was never known before.



The "Chicago Pneumatic" Class H S G Gasoline Driven Tank Mounted Compressor

In the "Chicago Pneumatic" Gasoline Driven Compressor the gasoline engine with all of its advantages is presented in its highest efficiency. The combination consists of the engine direct connected to an air compressor securely placed upon a truck mounted air receiver. The outfit represents the last word in compressor portability, providing compressed air when you want it, where you want it, and as you want it.

Contractors, road builders, municipal engineers, mining prospectors, quarrymen or rock excavation contractors engaged in field work of any description or wherever a compact, durable, powerful, and above all things portable, unit is required, know what this means.

It is a simple compressor outfit, automatically regulated and needs no expert attendance. Moderate in first cost and economical in gasoline consumption. No cartage of wood, coal or ashes; no electricity or other source of power supply.

Bulletins fully describing these compressors will be supplied on request.

Chicago Pneumatic Tool Company

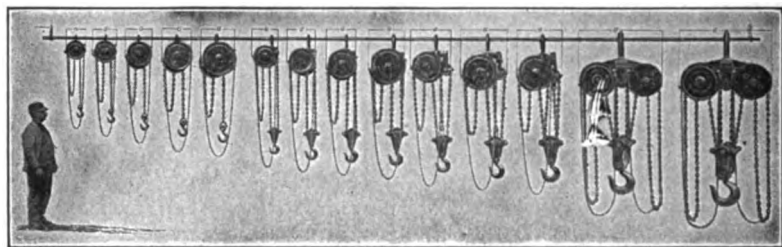
1014 Fisher Bldg.
CHICAGO

Branches Everywhere

50 Church Street
NEW YORK

A GUARANTEE against DEFECTS for the Life of the Block goes with every

Reading Multiple Gear Chain Block



Self-Lubricating—works in any position—works in all kinds of weather.
Try one 30 days—return at our expense if not satisfactory.

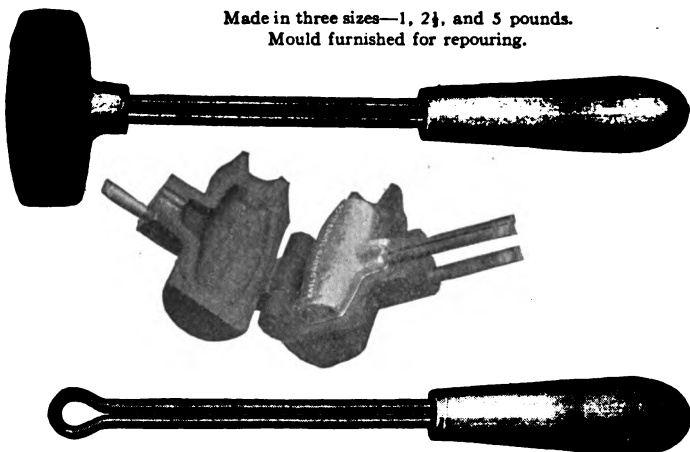
Any Chicago Pneumatic Tool Salesman will take your order or we will send direct.

Reading Chain Block Company

Reading, Pa.

If You Must Knock Use Soft Hammers

Made in three sizes—1, 2½, and 5 pounds.
Mould furnished for repouring.



SOLD BY THE
CHICAGO PNEUMATIC TOOL CO.

1014 Fisher Building,
CHICAGO

Branches Everywhere

50 Church Street
NEW YORK

When writing to advertisers please mention Ideal Power.

Moving Pictures Tell the Story of the "Rockford"

Here you see a No. 4 ROCKFORD MOTOR CAR with a load of eight men with their picks, shovels, and other tools required for section work.

They are on their way, going at the rate of twenty miles per hour. They are in a hurry, and every moment they save in getting to their work is a saving of dollars to the railroad company.

The speed with which the ROCKFORD MOTOR CAR brings them to the job is an inspiration to get to work quickly, and do their work diligently. They become conscious of a certain dignity, and work harder and with more snap and "ginger" than they possibly could after pumping a handcar for several miles. But you see how they are skimming along. The ROCKFORD has a way of "getting there."

It's the ROCKFORD engine that makes it possible for the ROCKFORD MOTOR CAR to cover ground so rapidly, and **SPEED**, in these days of hustle and rush, is a factor that can not be ignored. It is by your **SPEED** you will be judged when the annihilation of space is your object.

And the ROCKFORD MOTOR CAR has speed; for see how it is rapidly disappearing in the distance.

When the virtues of the ROCKFORD MOTOR CAR are considered, the car itself is more eloquent than we could ever hope to be, and it is with the car itself that we would like to have you acquainted.

But twenty miles an hour is no snail's pace, and the ROCKFORD MOTOR CAR has disappeared from view.

Have you Catalog 43? Ask for it.

Chicago Pneumatic Tool Co.

1014 Fisher Bldg.
CHICAGO

50 Church Street
NEW YORK

Branches Everywhere

When writing to advertisers please mention Ideal Power.

Place Your Delivery System on a Sound Financial Basis

By Eliminating the Unknown Quantity, The Horse



BEFORE the advent of the motor truck no one stopped to figure out the enormous expense of delivering goods by horse and wagon. Thomas Edison hits the nail on the head when he says: "A horse is the poorest motor ever built. He eats ten pounds of food for every hour he works. He eats twelve thousand pounds of food a year. He eats the whole output of five acres. And yet his thermal efficiency is only two per cent."

Compare the horse then with an auto truck which consumes nothing except while actually at work, and which, while working, does four times as much as a horse.

The merchant who adopts motor trucks places his delivery system on a sound financial basis, and when he buys a Little Giant he gets a car that is backed by a strong company, with the requisite capital and experience to make good its claims and guarantees.

Send for specifications and prices

CHICAGO PNEUMATIC TOOL CO.

1014 Fisher Bldg.,
CHICAGO

Branches Everywhere

50 Church Street
NEW YORK

When writing to advertisers please mention Ideal Power.

THE CHICAGO PNEUMATIC TOOL COMPANY

MANUFACTURE THE FOLLOWING
PNEUMATIC TOOLS, APPLIANCES, ETC.

After Coolers
Air Compressors
Air Economizers
Air Forge, Chicago
Air Motors
Air Receivers
Air Jacks
Airoilene
Airoilene Grease
Angle Gears, Little Giant
Angle Gears, Boyer
Annealing Machines
Armour Scaling Machines
Automatic Oiling Devices
Bell Ringers, Little Giant
Blow-off Cocks, Little Giant
Chucks, Drill
Chucks, Expanding
Commercial Car
Cranes
Drift Bolt Drivers
Drills, Boyer
Drills, Keller
Drills, Little Giant
Drills, Rock
Drilling Stands
Elevators
Electric Drills, Duntley
Electric Grinders, Duntley
Engineers' Valves
Flue Cutters, Chicago
Flue Rollers, and Ex-
panders, Little Giant
Grinders, Portable Electric

Hammers, Riveting
Hammers, Chipping and
Calking
Hammers, Stone
Hoists, Duntley Electric
Hoists, Pneumatic Geared
Hoists, Straight Lift
Holders-on
Hose, Special High Grade
Hose Clamp Tool
Hose Couplings (Universal)
Inter-Coolers
Magnetic Old Man
Painting Machines
Pipe Bending Machines
Pneumatic Saws
Pneumatic Plate
Straighteners
Railway Motor Section
Cars
Reamers
Reheaters
Rivet Busters
Riveters, Jamb
Riveters, Yoke
Riveters, Compression
Sand Rammers
Sand Sifters
Speed Recorders
Staybolt Chucks
Stone Dressers
Staybolt Nippers
Vacuum Pumps
Winches, Portable



All Aboard!

says O. A. SPURL of Maquoketa, Iowa.

"I am sending you photo of my Little Giant Bus, and we are quite proud of it. We haven't seen a nicer one outside of Chicago and we think it is the best one-ton truck made in the United States today. We don't know what lack of power is. We take 15 people anywhere in our city and up any grade, we have to make on high. We have never used over 3 gallons of gasoline any day yet.

We recommend this Model "H" one-ton truck to anyone on earth needing a truck. This truck runs fine and will pull anything loose at both ends."

This is enthusiasm born of confidence and satisfaction. It springs from the service that Little Giants give, for whether you use, drive, buy or sell a Little Giant you know that back of it is a giant company with \$11,000,000 of resources as a guarantee of stability, with twenty years' experience as a guarantee of permanence and ability, and with nearly 25,000 satisfied customers to recommend and approve.

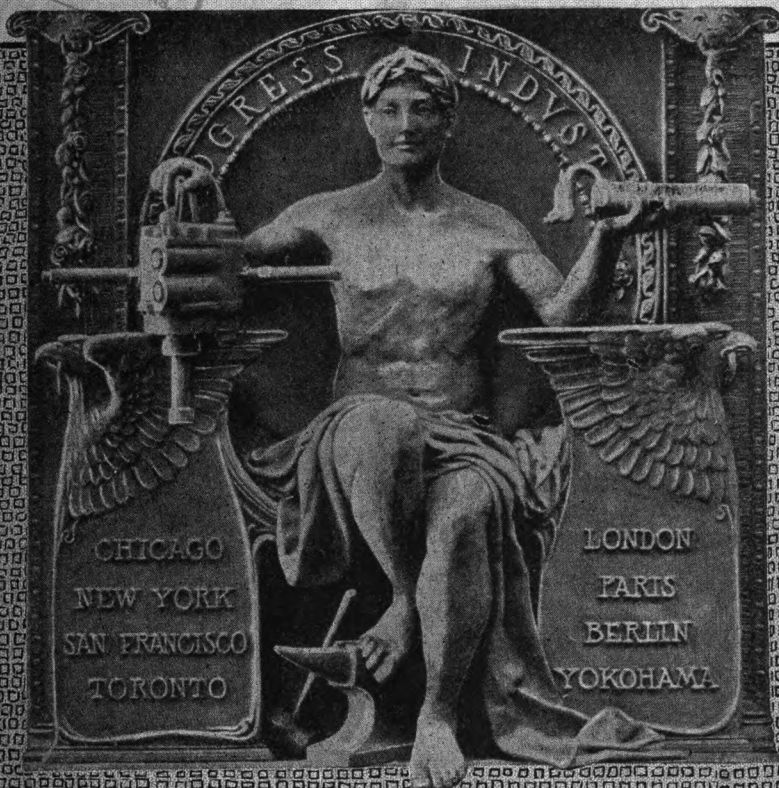
Write for specification and prices.

CHICAGO PNEUMATIC TOOL CO.

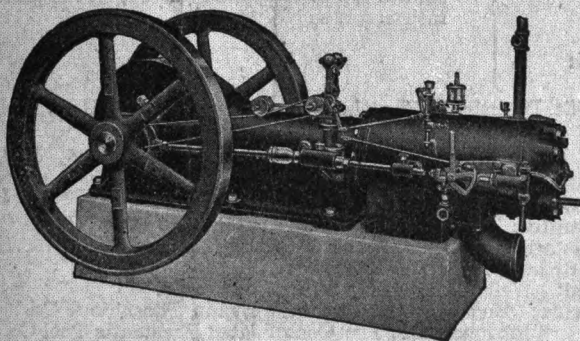
1014 FISHER BUILDING
CHICAGO

50 CHURCH STREET
NEW YORK

IDEAL POWER



Giant Fuel Oil Engine



See article page 39.

PUBLISHED MONTHLY BY
Chicago Pneumatic Tool Company
CHICAGO NEW YORK

Chicago Pneumatic Tool Company

General Office, Fisher Bldg.

Eastern Office, No. 50 Church St.

CHICAGO

NEW YORK

BRANCH OFFICES

Boston: 191 High Street
 Birmingham: 634 Brown-Marx Bldg.
 Buffalo: 503 Ellicott Square Bldg.
 Cincinnati: 1008 Mercantile Library Bdg.
 Cleveland: 1241 E. 49th St.
 Cleveland: 2122 Euclid Ave.
 Denver: 1037 East 20th Ave.
 Detroit: 547 Woodward Ave.
 El Paso: 303 San Francisco St.
 Erie, Pennsylvania
 Franklin, Pennsylvania
 Knoxville: 1005 Holston National
 Bank Bldg.

Los Angeles: 241-243 So. Los Angeles St.
 Louisville, Ky.
 Marquette, Mich.: Lake Shore Eng. Wks.
 Philadelphia: 1740-42 Market St.
 Pittsburgh: 10 and 12 Wood St.
 Portland, Ore.: 46-48 Front St.
 Richmond, Va.: 1004 Mutual Bldg.
 Salt Lake City: 117-119 W. 2nd South St.
 Seattle: 122 King St.
 Spokane: Cor. R. R. and Wall St.
 St. Louis: 813-19 Hempstead St.
 St. Paul: Pioneer Bldg.
 San Francisco: 71 First St.

FOREIGN

Canada: { Montreal, Canadian Pneumatic Tool Co.

{ The Holden Co., Ltd., Montreal, Toronto, Winnipeg.

British Columbia: Vancouver, Holden Co., Ltd., 429 Pendar St., L. L. Johnson, Rep.

Mexico: Mexico City, The General Supply Co., Av. Isabel La Catolica, No. 51.

Northern Mexico: (Sonora and Chihuahua), H. A. Carpenter & Bro., El Paso, Tex

Great Britain: { London, The Consolidated Pneumatic Tool Company

Spain: { Ltd., 9, Bridge Street, Westminster, S. W.

Portugal:

France: Paris, Anciens Etablissement Glaenzer & Perreaud 18-20 Faubourg du Temple.

Belgium: Brussels, The Consolidated Pneumatic Tool Co., Ltd., 22 Chaussee de Forest, Porte de Hal.

Italy: Milan, The Consolidated Pneumatic Tool Co., Ltd., via A Cappellini 7.

Germany:

Austria Hungary:

Balkan States:

Norway:

Sweden:

Holland:

Switzerland:

Denmark:

Berlin, Internationale Pressluft & Elektrizitats-Gesellschaft m. b. H. Berlin C. 54, Weinmeisterhof, Weinmeisterstrasse No. 14.

Russia: { St. Petersburg, Phoenix Engineering Works Co., Ltd., Polustrovskaya Quay No. 39.

India: { Bombay, Consolidated Pneumatic Tool Co., Ltd., Rampart Row, Fort.

{ Calcutta, The Consolidated Pneumatic Tool Co., Ltd., 8 Lal Bazar St.

Japanese Empire: Tokyo, Osaka, Seoul, Dairen, The F. W. Horne Co.

Philippine Islands: Manila, Frank L. Strong Machinery Co., 105 Escolta.

Australia: Sydney, Henry W. Peabody & Co.

New Zealand: Wellington, Henry W. Peabody & Co.

South America: Buenos Aires, Argentina, Evans, Thornton & Co.

South Africa: { Johannesburg, The Consolidated Pneumatic Tool Co., Ltd., 3 and 9 Cullinan Buildings.

BULLETIN DIRECTORY

Requests for these bulletins should be directed to our Chicago or New York offices or to our nearest branch as shown on inside front cover.

PNEUMATIC TOOLS

- 121... Pneumatic Rammers and Foundry Appliances.
- 124... Pneumatic Riveting, Chipping, Calking and Stone Hammers.
- 125... Pneumatic Yoke, Jam and Shell Riveters, Holders-on, Drift Bolt Drivers, Rivet Busters.
- 126... Compression Riveters.
- 127... Pneumatic Drills, Corner Drills, Reamers, Wood Borers, Flue Rolling and Tapping Machinery and Grinders.
- 128... Miscellaneous equipment for Pneumatic Drills, viz: Chucks, Twist Drills, Reamers, Augers, Flue Cutters, Flue Expanders, Angle Gears.
- 129... Hose, Hose Couplings and Hose Clamp Tools.
- 130... Lubrication of Pneumatic Tools.
- 131... Miscellaneous Tools, viz: Pipe Benders, Air Forge, Bolt Nipper, Drilling Stands, Blow-off Cocks, Bell Ringers, Drill Repair Vises, Painting Machines.
- 132... Pneumatic Motors and Pneumatic Geared Hoists.
- 133... Cylinder Air Hoists and Jacks.

ELECTRIC TOOLS

- E-22... Heavy Duty Electric Drills, Alternating Current.
- E-23... Air Cooled Direct Current Drills.
- E-25... Electric Hoists.
- E-27... Heavy Duty Electric Drills, Direct Current.
- E-29... Duntley Electric Grinders.
- E-30... Universal Electric Drills.
- E-31... Duntley Electric Drilling Stands.
- E-32... Duntley Track Drills.

AIR COMPRESSORS AND FUEL OIL ENGINES

- 34-A... Class "G" Steam Driven "Chicago Pneumatic" Compressors.
- 34-B... "Chicago Pneumatic" Power Driven Compressors.
- 34-C... "Chicago Pneumatic" Gasoline and Fuel Oil Engine Driven Compressors.
- 34-D... "Chicago Pneumatic" Corliss Compressors, Steam Driven.
- 34-F... Design and Construction Class "G" "Chicago Pneumatic" Compressors.

- 34-G... Air Receivers, Aftercoolers, Reheaters, etc.
- 34-H... General Instructions for Installing and Operating "Chicago Pneumatic" Compressors.
- 34-L... General Pneumatic Engineering Information.
- 34-N... Class N-SS and N-SB Single Enclosed Compressors.
- 34-O... Instructions for the Installation and Care of "Chicago Pneumatic" Gasoline Driven Air Compressors.
- 34-P... Class M-CB and M-CE New Enclosed Type Self-Oiling "Chicago Pneumatic" Power Driven Compressors.
- 34-R... Class L-SS and L-SB New Enclosed Type Self-Oiling "Chicago Pneumatic" Compressors.
- 34-S... Small Power Driven Compressors.
- 34-T... Class "M" Corliss Enclosed Type Self-Oiling Four Valve "Chicago Pneumatic" Steam Driven Compressors.
- 34-W... Class A-O Fuel Oil Engines.
- 186... Class Giant Fuel Oil and Gas Engines.

ROCK DRILLS AND HAND DRILLS

- 148... Chicago Valveless Hand Drills.
- 149... Chicago Portable Mine Hoist.
- 150... Chicago Coal Drills.
- 151... Chicago Slogger Rock Drills.
- 152... Chicago Gatling Drills.
- 153... Chicago Sinker.
- 154... Chicago Stoper.
- 172... Chicago Plug and Feather Drill.

LITTLE GIANT TRUCK

- 162... \$10,000 and an Idea.
- 164... Biography of the Little Giant.
- 165... Model H Chauffeur.
- 187... Comparison Horse and Wagon with Little Giant Delivery.

ROCKFORD and MISCELLANEOUS

- 37... Stone Carving Tools and Stone Dressers.
- 42... Boyer Speed Recorder.
- 43... Rockford Railway Motor Cars.
- 117... Lubrication of Rockford Cars.
- 119... Operation of Rockford Cars.
- 166... Boyer Speed Recorder with Clock Attachment.
- 167... Zerbe Safety Valve Discharge Register.

CHICAGO PNEUMATIC TOOL CO.

1014 Fisher Bldg., CHICAGO Branches Everywhere 50 Church St., NEW YORK

When writing to advertisers please mention Ideal Power.

CONVENTION DATES.

July 14-17, 1914—International Railway General Foremen's Association at Hotel Sherman, Chicago.

July 20-22, 1914—American Railway Tool Foremen's Association, Hotel Sherman, Chicago.

August (third Tuesday), 1914—International Railroad Master Blacksmiths' Association.

August 20-21, 1914—American Association of Railroad Superintendents at New York.

Sept. 1-4, 1914—American Boiler Manufacturers' Association, Waldorf-Astoria Hotel, New York City.

Sept. 8-10, 1914—Roadmasters' and Maintenance of Way Association at Chicago.

Sept. 8-11, 1914—Master Car and Locomotive Painters' Association at Nashville, Tenn.

Sept. 15-18, 1914—Traveling Engineers' Association at Hotel Sherman, Chicago.

Sept. 22-24, 1914—Railway Signal Association at Bluff Point, N. Y.

Oct. 12-16, 1914—American Electric Railway Association at Atlantic City, N. J.

Oct. 19-23, 1914—Association of Railway Electrical Engineers at Chicago.

Oct. 20-22, 1914—American Railway Bridge and Building Association at Los Angeles.

Nov. 17-19, 1914—Maintenance of Way and Master Painters' Association at Detroit, Mich.

Jan. 19-21, 1915—American Wood Preservers' Association at Chicago.

March 15-19, 1915—National Railway Appliances Association at Chicago.

March 16-18, 1915—American Railway Engineering Association.

June, 1915—International Railway Congress at Berlin, Germany.

ENGINEERING SOCIETIES, ETC.

American Association of Railroad Superintendents—Secretary, E. H. Harman, St. Louis, Mo.

American Concrete Institute—Secretary, Edw. E. Krauss, Harrison Bldg., Philadelphia, Pa.

American Electric Railway Engineering Association—Secretary-Treasurer, H. C. Doncker, 29 W. 39th St., New York, N. Y.

American Highway Association—Secretary, J. E. Pennypacker, Jr., Colorado Bldg., Washington, D. C.

American Institute of Electrical Engineers—Secretary, F. L. Hutchinson, 33 W. 39th St., New York City; Honorary Secretary, R. W. Pope.

American Institute of Mining Engineers—Secretary, Bradley Stoughton, 29 W. 39th St., New York City.

American Mining Congress—Secretary, J. E. Callbreath, Jr., 1021 Munsey Bldg., Washington, D. C.

American Order of Steam Engineers—Supreme Chief Engineer, Geo. W. Goodwin, Towson, Md.; Ed. A. Reboul, Secretary, 1110 Earl St., Philadelphia.

American Railway Engineering Association—Secretary, E. H. Fritch, 1011 Karpen Bldg., Chicago, Ill.

American Road Builders' Association—Secretary, E. L. Powers, 150 Nassau St., New York. Annual convention, Dec. 9-12, at Philadelphia.

American Society of Civil Engineers—Secretary, Chas. Warren Hunt, 220 W. 57th St., New York City.

American Society of Engineering Contractors—Secretary, J. R. Wemlinger, 11 Broadway, New York City.

American Society of Heating and Ventilating Engineers—Secretary, E. A. Scott, 29 W. 39th St., New York City.

American Society of Mechanical Engineers—Secretary, Calvin W. Rice, 29 W. 39th St., New York City.

American Society of Naval Engineers—Secretary-Treasurer, Lieut. O. L. Cox, U. S. Navy, Navy Department, Washington, D. C.

American Water Works Association—Secretary, J. M. Diven, 47 State St., Troy, N. Y.

Association of Civil Engineers, Cornell University—President, V. G. Thomassen, Ithaca, N. Y.; Secretary, J. M. Sill, Ithaca, N. Y.

Association of Engineering Societies—Chairman Board of Managers, Prof. Gardner S. Williams, University of Michigan, Ann Arbor, Mich.; Secretary, Fred Brooks, 31 Milk St., Boston, Mass.

Association of Railway Electrical Engineers—Secretary, J. A. Andreucetti, C. & N. W. Ry. Co., Chicago, Ill.

Boston Society of Civil Engineers—Secretary, S. Everett Tinkham, 715 Tremont Temple, Boston, Mass.

Canadian Society of Civil Engineers—Secretary, Clement H. McLeod, 176 Mansfield St., Montreal, Can.

Canadian Railway Club—Secretary, James Powell, Grand Trunk Ry., Montreal, Que.

Central Railway Club—Secretary, H. D. Vought, 95 Liberty St., New York.

Civil Engineers' Society of St. Paul—Secretary, L. S. Pomeroy, Old State Capitol Bldg., St. Paul, Minn.

Cleveland Engineering Society—Secretary, David Gaeher, Cleveland, Ohio.

Connecticut Society of Civil Engineers—Secretary-Treasurer, J. Fitzpatrick Jackson, New Haven, Conn., Box 1304.

Detroit Engineering Society—Secretary-Treasurer, Frederick H. Mason, 614 Moffat Bldg., Detroit, Mich.

Engineering Association of the South—Secretary-Treasurer, J. C. Evans, Nashville, Tenn., Carnegie Library.

Engineers' Club of Cincinnati—Secretary, E. A. Gast, P. O. Box 333, Cincinnati, Ohio.

Engineers' Club of Minneapolis—President, L. S. Gillette, 74 Chamber of Commerce, Minneapolis, Minn.; Secretary, Louis Clousing, 2411 Oakland Ave., Minneapolis.

Engineers' Club of Philadelphia—Secretary, Edw. E. Krauss, Philadelphia, Pa.

Engineers' Club of St. Louis—Secretary, W. W. Horner, 5203 Maple Ave., St. Louis, Mo.

Engineering Societies of Purdue University, Lafayette, Ind.

Engineers' Society of Western New York—President, Louis H. Knapp, 366 Ellicott Square Bldg., Buffalo; Secretary, Thomas J. Rogers, Municipal Bldg., Buffalo.

Engineers' Society of Pennsylvania—Secretary, E. R. Dasher, Box 704, Harrisburg, Pa.

Engineers' Society of Northeastern Pennsylvania—Secretary, H. S. Webb, 415 N. Washington Ave., Scranton, Pa.

Engineers' Society of Western Pennsylvania—Secretary, Elmer K. Hiles, 2511 Oliver Bldg., Pittsburgh, Pa.

Illinois Society of Engineers and Surveyors—Secretary, E. E. R. Tratman, Wheaton, Ill.

Indiana Engineering Society—Secretary, Chas. Brossmann, Indianapolis, Ind.

International Railway Congress Association—President (of the International Commission)—W. Toudeller, 11 Rue de Louvain, Brussels, Belgium; Secretary General, L. Weissenbruch, same address.

Iowa Engineering Society—Secretary-Treasurer, Prof. S. M. Woodward, Iowa City, Ia.

Louisiana Engineering Society—Secretary, Jas. M. Roberts, 132 Carondelet St., New Orleans, La.

Michigan Engineering Society—President, Miner C. Taft, Kalamazoo, Mich.; Secretary, Alba L. Holmes, Grand Rapids, Mich.

Montana Society of Engineers—President, John H. Klopinger, Great Falls, Mont.; Secretary, Clinton H. Moore, Butte, Mont.

Ohio Engineering Society—President, E. G. Bradbury, New Haven Bldg., Columbus, O.; Secretary, Clyde J. Knisley, New Philadelphia, O.

Ohio Society of Mechanical, Electrical and Steam Engineers—Secretary-Treasurer, Frank E. Sanborn, Ohio State University, Columbus, O.

Rochester Engineering Society of Rochester—Secretary-Treasurer, Edw. F. Davison, 266 Lyell Ave., Rochester, N. Y.

Toledo Society of Engineers—President, L. M. Gram, 1047 Spitzer Bldg., Toledo, O.; Secretary, L. T. Owen, 1047 Spitzer Bldg., Toledo, O. Regular meeting second Friday in each month.

Utah Society of Engineers—Secretary, Fred D. Ulmer, Oregon Short Line, Salt Lake City, Utah. Third Friday of each month except July and August.

Vermont Society of Engineers—Secretary, Geo. A. Reed, Barre, Vt.

Western Society of Engineers—President, Albert Reichmann, 72 W. Adams St.; Secretary, J. H. Warder, 1735 Monadnock Bldg., Chicago.

MECHANICAL AND TRADE SOCIETIES.

Air Brake Association—Secretary, F. M. Nellis, 53 State St., Boston, Mass.

American Boiler Manufacturers' Association—President, E. D. Meier, New York City; Secretary, J. D. Farasey, 37th St. and Erie Ry., Cleveland, O.

American Electric Railway Association—Secretary-Treasurer, H. C. Donecker, 29 W. 39th St., New York City.

American Electric Railway Manufacturers' Association—Secretary-Treasurer, H. G. McConnaughy, 165 Broadway, New York City.

American Foundrymen's Association—Secretary, Richard Moldenke, Watchung, N. J.

American Institute of Metals—Secretary-Treasurer, W. M. Corsee, care Lumen Bearing Co., Buffalo, N. Y.

American Railway Association—General Secretary, W. F. Allen, 75 Church St., New York City.

American Railway Bridge and Building Association—President, A. F. Killam, I. C. R. R., Moncton, N. B.; Secretary, C. M. Lichty, C. & N. W. Ry., Chicago.

American Railway Master Mechanics' Association—President, D. R. MacBain, L. S. & M. S. Ry., Cleveland, O.; Secretary, J. W. Taylor, Karpen Bldg., Chicago.

American Railway Tool Foremen's Association—Secretary-Treasurer, A. R. Davis, 750 Pine St., Macon, Ga.

Association of Maintenance Way Master Painters (United States and Canada)—President, J. S. Rice, L. S. & M. S. R. R., Elkhart, Ind.; Secretary, Harry J. Barkley, I. C. R. R., Carbondale, Ill.

Boiler Makers' Supply Men's Association—Secretary, Geo. Slate, The Boiler Maker, 17 Battery Pl., New York City.

Canadian Association of Stationary Engineers—Secretary, W. A. Crockett, Mount Hamilton, Ont., Can.

Canadian Roadmasters' Association—Secretary, J. M. Mackenzie, West Toronto, Can.

Car Foremen's Association of Chicago—President, Geo. Thompson, L. S. & M. S. R. R. Chicago; Secretary, Aaron Kline, 841 N. 50th Ct., Chicago.

General Superintendents' Association of Chicago—Secretary, A. M. Hunter, 605 Grand Central Station, Chicago.

International Railroad Master Blacksmiths' Association—Secretary, A. L. Woodworth, C. H. & D. Ry., Lima, O.

International Railway Fuel Association—C. G. Hall, Secretary, 922 McCormick Bldg., Chicago.

International Railway General Foremen's Association—Secretary-Treasurer, Wm. Hall,

C. & N. W. Ry., 829 W. Broadway, Winona, Minn.

International Union of Steam Engineers—President, Matt Comerford, 486 E. 8th St., Brooklyn, N. Y.; Secretary, Robert A. McKee, 606 Main St., Peoria, Ill.

Master Boiler Makers' Association—President, T. W. Lowe, G. B. I., C. P. R. R., 760 Westminster Ave., Winnipeg, Man.; Secretary, Harry D. Vought, 95 Liberty St., New York City.

Master Car Builders' Association—President, A. Stewart, S. M. P. & E. Southern Ry., Washington, D. C.; Secretary, J. W. Taylor, Karpen Bldg., Chicago, Ill.

Master Car and Locomotive Painters' Association—Secretary, A. P. Dane, B. & M. R. R., Reading, Mass.

Maintenance of Way Master Painters' Association—Secretary, T. I. Goodwin, C., R. I. & P. Eldon, Mo.

National Association of Stationary Engineers—Secretary, Fred W. Raven, 443 S. Dearborn St., Chicago, Ill.

National Founders' Association—Secretary, J. M. Taylor, Room 842, 29 S. La Salle St., Chicago, Ill.

National Railway Appliance Association—Secretary, Bruce V. Crandall, 537 S. Dearborn St., Chicago, Ill.

Railway Equipment Manufacturers' Traveling Engineers' Association—Secretary, W. L. Allison (Franklin Railway Supply Co.), Chicago, Ill.

Railway Signal Association—President, B. H. Mann, Mo. Pac. Ry., St. Louis, Mo.; Secretary, C. C. Rosenberg, Bethlehem, Pa.

Railway Storekeepers' Association—President, J. W. Gerber, O. S. K., Sou. R. R., Washington, D. C.; Secretary, J. P. Murphy, Box C, Collinwood, O.

Railway Supply Manufacturers' Association—Secretary, J. D. Conway, 2136 Oliver Bldg., Pittsburgh, Pa.

Roadmasters' and Maintenance of Way Association—Secretary-Treasurer, L. C. Ryan, C. & N. W. Ry., Sterling, Ill.

Supply Men's Association of American Boiler Manufacturers' Association of United States and Canada—President, J. T. Corbett (J. T. Ryerson & Son) Chicago; Secretary, F. B. Slocum (Continental Iron Works), Brooklyn, N. Y.

Traveling Engineers' Association—Secretary, W. O. Thompson, N. Y. C. Car Shops, East Buffalo, N. Y.

Coining Words.

The esteemed Weather Bureau has sprung a new one. It is the word "smog," and it means smoke and fog. The bureau explains that very frequently there are times when this mixture is apparent in the atmosphere, and it considers the new word a great little idea.

Very well, "smog" let it be. But why end there? Let's call a mixture of snow and mud "smud." A mixture of snow and soot "snoot" and a mixture of snow and hail "snail." Thus we might have a weather forecast:

"Snail today, turning to snoot tonight; tomorrow smoggy with smud."



No. 106

Economy in High Speed Drilling?

Yes: Providing you use a properly made, uniformly tempered Drill
 "CLEVELAND" Drills can always be depended on

The **CLEVELAND** Twist Drill Co.
 CLEVELAND Chicago

NECESSITIES

High Grade Rubber Goods
 Fire Hose
 Reels, Nozzles
 Fire Hose Carts
 Rubber Cement
 P. & W. Rubber Preservative
 Rubber Boots
 Leather-Soled Rubber Boots

Leather Belting
 Upholsterer's Leather
 Leather and Silk Fringes
 Vestibule Diaphragms
 Gimp
 Brass Nails
 Leather Head Nails

Signal Flags
 Bunting
 Linoleum
 Cab Cushions
 Cab Curtains
 Track Jacks
 Economy Soap Stock
 Nut Locks

GUILFORD S. WOOD

Great Northern Building

CHICAGO, ILLINOIS

BURKE ELECTRIC COMPANY

MAIN OFFICE AND WORKS

ERIE, PA.

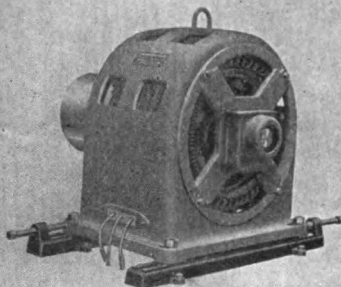
BULLETIN 107

JANUARY 1922

Business Month 1922

POLYPHASE INDUCTION MOTORS

SIZES: 3, 4, 5, 7, 10, 15, 25, 35, 50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800, 850, 900, 950, 1000, 1100, 1200, 1300, 1400, 1500, 1600, 1700, 1800, 1900, 2000, 2200, 2400, 2600, 2800, 3000, 3200, 3400, 3600, 3800, 4000, 4200, 4400, 4600, 4800, 5000, 5200, 5400, 5600, 5800, 6000, 6200, 6400, 6600, 6800, 7000, 7200, 7400, 7600, 7800, 8000, 8200, 8400, 8600, 8800, 9000, 9200, 9400, 9600, 9800, 10000



TYPE 100 CONSTRUCTION MOTOR

This Bulletin

is free on your request. You will be better informed on the construction as well as operation of induction motors if you get it and read it.

BURKE ELECTRIC COMPANY

ERIE,
 PA.

BURKE ELECTRIC CO., Erie, Pa.
 Please Send Bulletin 107-C

Name

Address

IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances
By THE IDEAL POWER PUBLISHING COMPANY
Fisher Building Chicago

Vol. 11.

JULY, 1914.

No. 2.

The "Giant" Low Grade Fuel Oil Engine

A Recent Product of
The Chicago Pneumatic Tool Co.

More than ten years have passed since we first entered the internal combustion engine field with our type H-SG "Chicago Pneumatic" Gasoline Engine Driven Air Compressor for portable and stationary service in the operation of Pneumatic Riveting, Chipping, Calking and Drilling Tools. Subsequently our Rockford Gasoline Driven Section Car and later our "Little Giant" Commercial Motor Truck were designed and successfully marketed. All of these have gained success by reason of their correct design and the exceptional quality of the materials and workmanship of which they are made.

Realizing the widespread demand existing for a low grade fuel engine, correct in principle and built to endure the severe usage that such engines must withstand, we have employed our broad experience and exceptional facilities in the design and production of the "Giant" Low Grade Fuel Oil Engine, described in the pages following.

The severity of the service and the widely varying degree and quality of fuels employed, impose requirements in an engine of this character that must be met with an intelligent knowledge of service conditions only obtainable through broad observation and thorough tests. Intricate mechanism and delicate

adjustments have no place in an engine for this work.

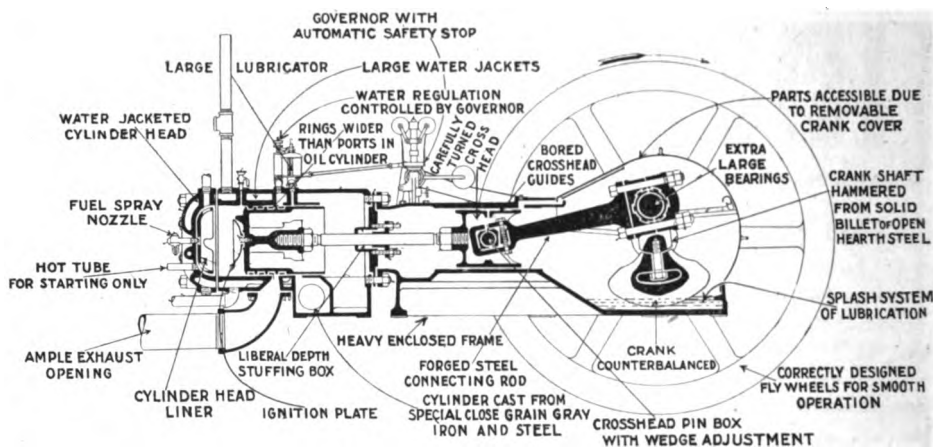
The "Giant" Low Grade Fuel Oil Engine is the result of several years of painstaking development, and we offer it with the confidence that it will share the reputation of our other products.

The Class A-O "Giant" engine will operate successfully on any of the following grades of fuel:

Crude Oil	Engine Distillate
Fuel Oil	Holder Oil
Residium	Coal Oil
Stove Oil	Kerosene
Star Oil	Alcohol
Tops	Motor Spirits
Tar Oil	Naphtha
Solar Oil	Benzol
Gas Oil	Gasoline

It has no valves, gears, carburetors, mixers, oil or air heaters, magnetos, batteries, timers, switches, coils, wires or spark plugs.

The employment of a single cylinder minimizes working parts and their consequent friction. The crosshead construction is extremely important, providing features of advantage over the trunk piston type that cannot and must not be ignored. The crosshead removes from the piston head the angular thrust of the connecting rod with its tendency



Diagrammatic sectional view showing important features of "Giant" Oil Engine. (Reproduced from Bulletin 34-W.)

to wear the top and bottom of the cylinders more than the sides, with a result that oils of a heavy or asphaltum base will work back and under the piston rings, hardening there and causing excessive cylinder wear.

With the crosshead type all bearings are accessible and by compressing in the front end of the cylinder instead of in the crank case, better compression is secured, there being no joints to offer opportunity for leakage and the compression space is greatly reduced. Lubricating oil from the crank case cannot possibly enter the combustion chamber and disturb regulation.

The cylinder of Class A-O engines is of the valveless, two-cycle low compression type. Metal is generously used and is carefully distributed to withstand the stresses of hard service and at the same time maintain castings of as even thickness as possible. Water jackets are cast integral with the cylinders but cover only that portion in which the combustion takes place. This construction simplifies the cylinder casting and facilitates the equalization of temperatures at all points.

Like the cylinder the head is made of the best close grained cast iron obtainable and is a single piece casting thoroughly water jacketed. Studs and nuts hold the head to the cylinder and permit internal inspection of the same at

any time without destroying the gasket.

The trunk type of piston is employed in "Giant" engines and four self-adjusting eccentric spring rings are provided. These are wider than the admission and exhaust ports, cannot catch or break, and effectually secure the compression which accounts for the efficiency of the engines.

The deflector is of a form that has been adopted after exhaustive experimental research and tests; it absolutely insures perfect scavenging of the cylinder at each stroke. This latter result is also due to the relatively high compression obtained in the crank end of our cylinders, this compression only being possible in engines having an airtight joint between the cylinder and frame.

The method of igniting the fuel charge is positive and extremely simple with no delicate parts involved and no sensitive adjustments necessary. A thin circular plate is rigidly secured to the piston, and after the engine is started fuel injected against the hot plate is instantly gasified and ignited. By this system air only is compressed in the cylinders, the fuel is injected at the proper time and high sustained operating economies are possible.

A fuel pump of simple construction is used.

The method of regulating the stroke

of the pump plunger is extremely efficient and meets all conditions imposed by widely varying loads. A cam under the control of the governor rests against a collar on the plunger rod, the position of the cam determining and regulating the stroke of the pump and consequently the quantity of fuel injected. A hand-operated lever, also acting upon the plunger, is provided for stopping the engine.

The fuel nozzle is a combination ball check valve and nozzle, is made of bronze and screwed into the center of the cylinder head. It can be quickly replaced and can be cleaned without removing from the cylinder.

The value of a proper quantity of water mixed with the fuel in the combustion space has long been recognized, but the attempts to utilize it and to efficiently regulate the quantity to suit the varying fuels and loads have not in general been satisfactory.

The water regulator of the Giant A-O engine is nothing more than a needle valve, which is at all times under the control of the governor and automatically varies the admission of water to meet load requirements. By thus proportioning water supply to the quantity of fuel injected we are able to obtain an appreciable increase in power and economy, to prevent overheating of cylinder head and burning of the lubricating oil, to eliminate shocks in the engine and to ensure freedom from carbon deposits.

The frame is completely enclosed, and removable oil tight covers for the side and crank case give ready access for inspection of parts and necessary adjustments. The pleasing lines, strength and solidity of the frame are apparent.

Main bearings are of extra large proportions, are cast integral with the frame, and well supported by a proper distribution of metal. They are of the diagonal box type, lined with the best grade of Babbitt metal and provided with grooves for the conveyance of oil. Necessary means of adjustment of the bearing caps to compensate for wear are provided.

Oil caps are cast on the frame and caps and serve to catch and return to the interior of the frame any oil leaking through the bearings.

The crank shaft is of the center crank type, made of the best open hearth steel forging, and of exceptionally liberal proportions throughout. Adequate counterbalance weights are provided, these insuring steady operation of the engine at the highest speeds.

Connecting rods of "Giant" engines are not cast, but are of the best steel forgings procurable. The wrist pin end is of the solid type, fitted with bronze boxes, while the crank end is of the marine type, lined with the best grade of Babbitt metal.

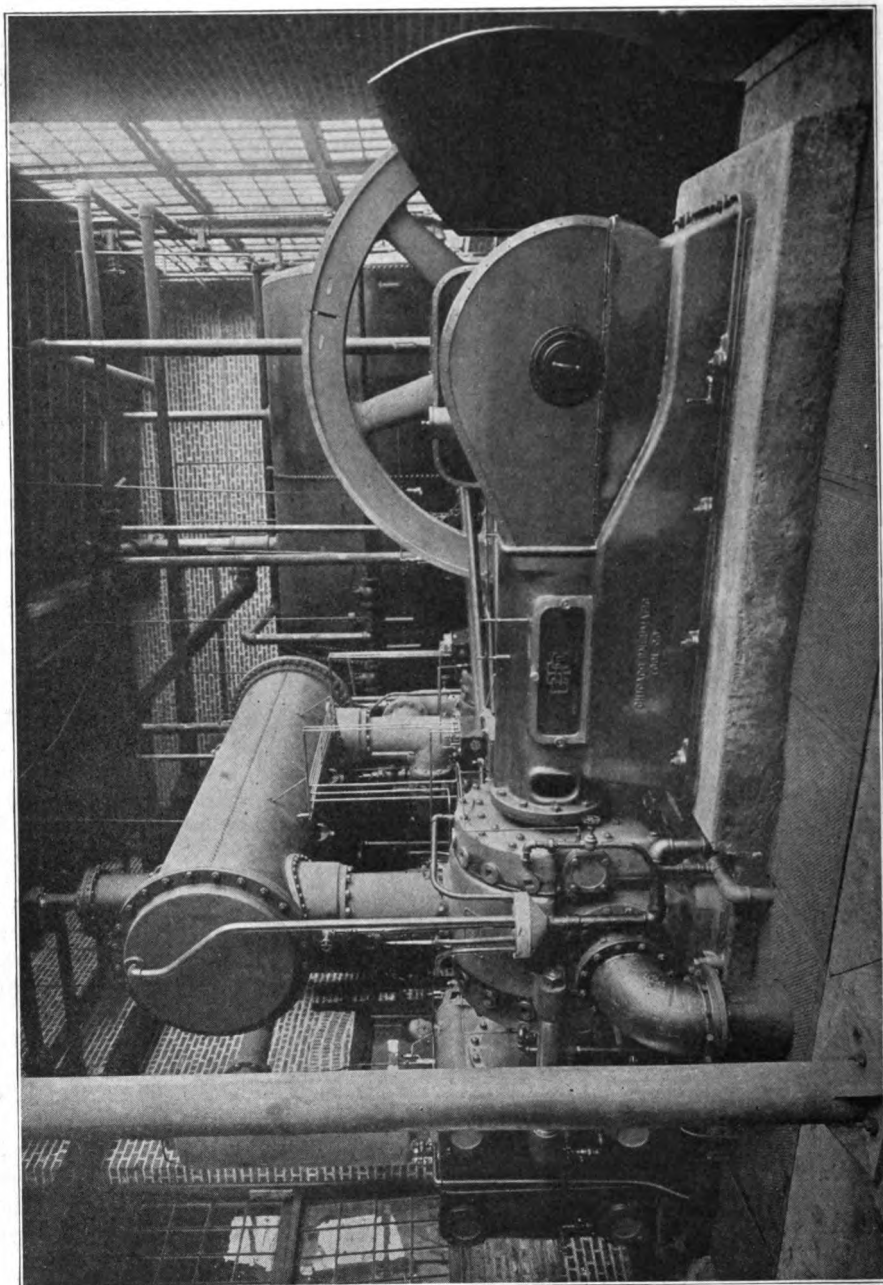
Fly wheels are of extra large diameter to facilitate starting, and are of sufficient weight to ensure steady operation. For the smaller sizes there is furnished a plain belt pulley and for the larger sizes friction clutch pulleys, which may be bolted to the arms of either fly wheel.

All of the smaller engines may be readily started by hand, but for the largest size and for the smaller, when desired, we provide a small vertical single-acting air compressor, which is driven from a pulley bolted to the fly wheel. This compressor delivers air to a storage receiver, suitable for 150 pounds working pressure, and a lever-operated air starting valve permits running the engine on air until firing of the fuel charge begins.

A sight feed oiler of ample size is furnished for the cylinder. A force feed lubricator is provided when specially ordered.

These engines are built in four standard strokes, 8, 10, 12 and 14 inches of 12, 18, 25 and 45 Brake horse power, respectively. Also built in Duplex or Twin construction in 24, 36, 50 and 90 Brake horse power, respectively.

One of them, of the 25 horse power size was used to operate a Type N. S. B., "Chicago Pneumatic" compressor, which furnished the compressed air for the M. C. B. and M. M. convention recently held at Atlantic City.



Type M-CSC "Chicago Pneumatic" Compressor installed by the Chicago and Alton Railway at Glenn, Ill.

Up To Date.

Smith's typist wore these lacy waists
And skirts like gauze—but tighter.
I said to Smith: "I see you have
A vis-ible type-writ-er."

Wasted.

"Did the doctor tell you what you
had?"

"No. He took what I had without tell-
ing me."—Life.

Chicago & Alton Railway Installs 2,000-Foot "Chicago Pneumatic" Corliss Compressor.

The "Chicago Pneumatic" Corliss compressor shown on the opposite page is a Type M-CSC machine, having compound steam and two-stage air cylinders of the following dimensions:

High pressure steam.....	17 inches
Low pressure steam.....	28 inches
Low pressure air.....	25 inches
High pressure air.....	15 inches
Length of stroke.....	22 inches

This unit which is the smaller of two recently purchased by the C. & A. Railway, accurately reflects the present state of the art of manufacturing Corliss compressors and is typical of the "Chicago Pneumatic" Class M steam machines.

While electric-driven units are in general rapidly replacing steam-driven compressors, in many cases efficient steam plants make the installations of Corliss units highly desirable provided such machines are designed for high economies and operate at higher speeds than have heretofore prevailed.

The compressor illustrated has a rated displacement of 1,998 cubic feet per minute, at 160 R. P. M. at which speed it will attain practically the same low water rate as is obtained with a standard slow moving Corliss power engine of equivalent size operating under the same conditions.

With this economy this machine also combines large capacity for a given weight and floor space, totally enclosed construction, automatic lubrication and effectual regulation with a simplified valve gear.

These Corliss compressors are manufactured in capacities of 1,500 to 2,500 cubic feet per minute and owing to the distinctive features briefly described above are very adaptable to railroad shops, machine shops, foundries, mines and other industrial plants where large economical steam compressors can be utilized to advantage.

A New Type of Air Compressor.

The air compressor which furnished compressed air for the M. C. B. and M.M. convention exhibit at Atlantic City was one of the latest type developed by the Chicago Pneumatic Tool Company, and known as their Class N. S. B. It was operated by a "Giant" fuel oil engine.

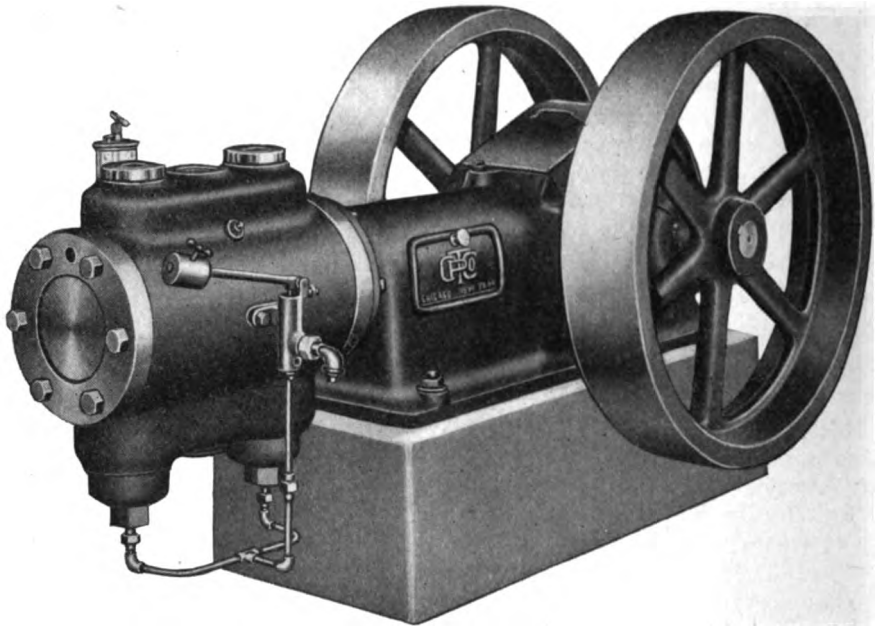
In this type of compressors, the frame is completely enclosed, and removable oil tight covers for the side and crank case give ready access for inspection of parts and necessary adjustments.

Main bearings are of extra large proportions, are cast integral with the frame and well supported by a proper distribution of metal. They are of the diagonal box type lined with the best grade of Babbitt metal and provided with grooves for the conveyance of oil. Necessary means of adjustment of the bearing caps to compensate for wear is provided.

Oil lips are cast on the frame and caps and serve to catch and return to the interior of the frame any oil leaking through the bearings.

The air cylinder is made of the very best cast iron, is designed so as to permit of reborings with safety, and together with the heads is completely water jacketed. Piston is carefully fitted and is provided with two cast iron spring rings.

The valves are the heart of an air compressor and the value of many an otherwise good design is nullified by the attempts to employ older types of valves at the speeds demanded by present day practice. The results of years of practical experience and prolonged tests under severe conditions are reflected in "Simplate" flat disc type of inlet and discharge valves. These are set radially in the cylinder, are arranged to give a minimum clearance and afford a higher volumetric efficiency than is usually obtainable with small compressors. No cages are employed and the openings for air are consequently very large and direct. This feature eliminates the necessity of lubrication and assures a minimum power consumption to discharge air from the cylinder.



Type N-SB Belt Driven "Chicago Pneumatic" Compressor fitted with Simplate valves. (Reproduced from Bulletin 34-N.)

The valves being designed for high speeds are naturally very light, but specially selected materials and small lift combine to render them practically indestructible. They are guaranteed against defects or breakage for a period of three years.

The crank shaft is of the center crank type, made of the best open hearth steel forging and of exceptionally liberal proportions throughout. Adequate counter-balance weights are provided, these insuring steady operation of the compressor at the highest speeds.

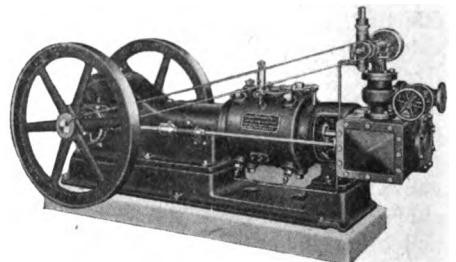
Connecting rods of Class N Compressors are not cast, but are of the best steel forgings procurable. The wrist pin end is of the solid type, fitted with bronze boxes, while the crank end is of the marine type lined with the best grade of Babbitt metal. No better rod is obtainable.

Friction and wear are reduced to a minimum and heating and cutting of bearings absolutely prevented through the medium of a positive self oiling system of lubrication for the main bearings,

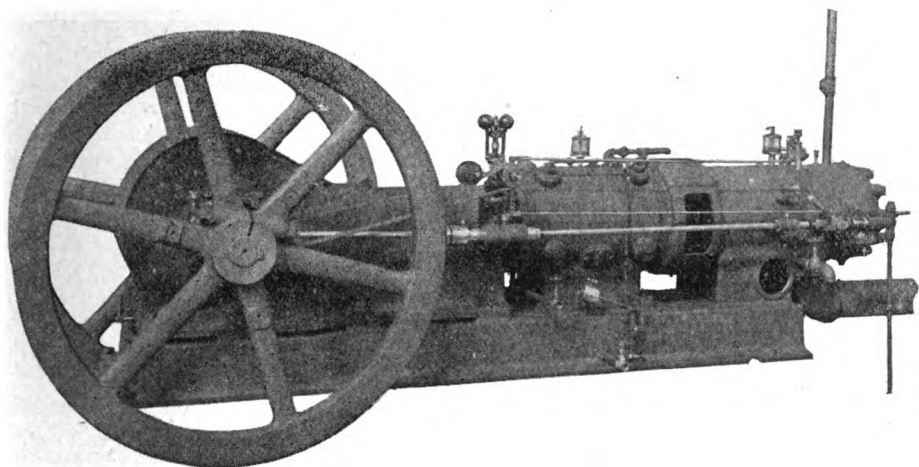
crank and cross-head pins and cross-head guides. The enclosed frame allows oil to be carried at a sufficient height in the case to enable the crank and connecting rod to dip at each revolution, this action splashing oil into distributors to every bearing. Lubrication is positive and copious regardless of the speed.

Sight feed oilers of an ample size are furnished for the steam and air cylinders.

Both steam and belt driven machines of this type are equipped with a simple unloading mechanism by means of which the air inlet valves are held from their seats when the desired received pressure



Type N-SS Steam Driven "Chicago Pneumatic" Air Compressor.



Type N-SO "Chicago Pneumatic" Air Compressor, combining the power cylinder of the "Giant" Engine with the air cylinder of the new Type N with Simplate Valves.

is obtained. This relieves the compressor of all load and proportions power consumption to air capacity requirements.

Steam compressors are provided with a combined speed governor and air pressure regulator of approved design, this automatically controlling the speed of the machine in accordance with the demand for air.

Class N-SB and N-SS compressors are built in five standard strokes, 6-8-10-12 and 14 inches of capacity from 40 to 550 cubic feet per minute.

A New Low-Grade Fuel Oil Engine-Driven Compressor.

In their new type N. S. O. compressors the Chicago Pneumatic Tool Co. have combined the power cylinder of their Giant fuel oil engines and the air ends of their Type N compressors with Simplate flat disc valves, both of these being described elsewhere in this issue. In general, they are built on the well known lines of the "Chicago Pneumatic" gasoline-driven compressors and are adaptable to stationary, semi-portable or portable use.

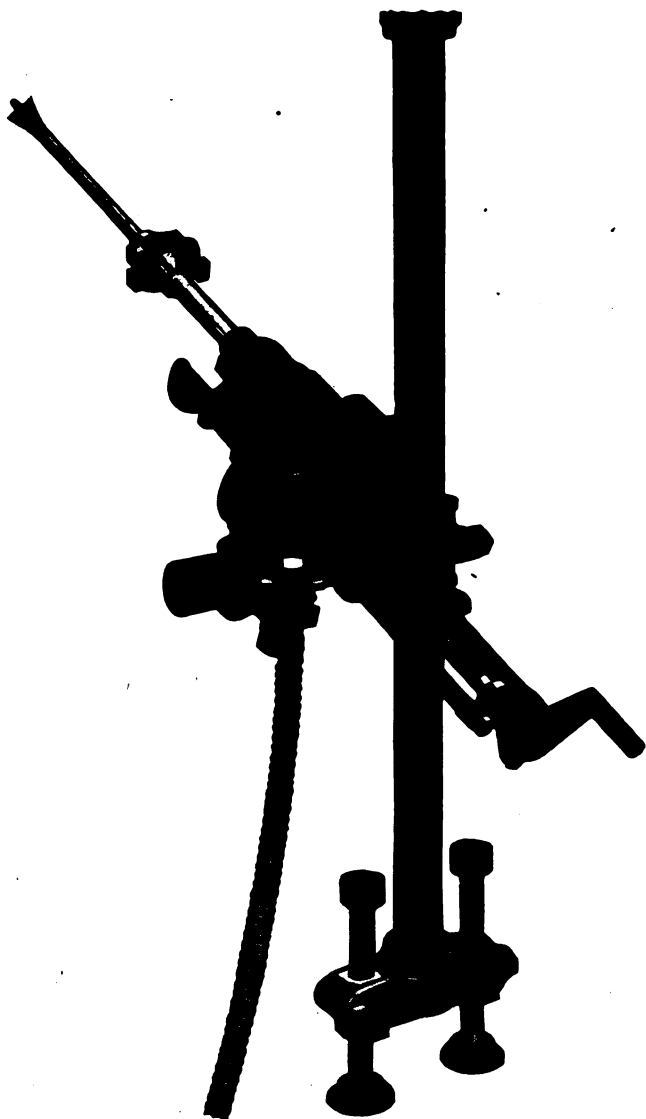
Combining as they do extreme simplicity with rugged construction, large

capacity and low sustained operating costs, they are particularly to be recommended for mines, railroad construction work, laying of water, gas and sewer mains, general field work of contractors, water pumping and the numerous other uses for which a reliable and economical compressor can be employed.

Their adaptability to any fuel oils above 28 degrees Baume, together with the enclosed construction, automatic lubrication and regulation and freedom from the necessity of expert attendance enable these machines to meet the requirements of many services which have formerly precluded the satisfactory employment of compressed air.

Engineers contemplating the installation of large steam or electric-driven units will benefit by investigating the possibilities of applying multiple compressors of the fuel oil engine-driven type and will appreciate the flexibility, low cost of operation and freedom from the danger of a complete shut down which is obtainable in such a battery.

These compressors are offered in four standard sizes in strokes of 8, 10, 12 and 14 inches, with capacities from 70 to 300 feet. Bulletin 34K fully describes them.



"Chicago Gatling" One-Man Drill mounted on column.

The "Chicago Gatling" Drill.

The "Chicago Gatling" drill is what its name implies—the most rapid striking and hardest hitting drill yet invented—a real Gatling. Striking 600 to 750 blows per minute, like so many bullets, and with each blow absolutely uncushioned, it has a penetrating power hard to conceive—a force which nothing out-

side of hardened armor plate seems able to resist.

And the marvel is that with all its power it only weighs 145 pounds, which places it in the one-man drill class—that is, it is light enough for one man to handle alone. But it is not only the light weight of the "Chicago Gatling" drill which warrants this classification.

It is more particularly a one-man drill because of its freedom from breakdowns—its uninterrupted activity.

Furthermore, this "Chicago Gatling" drill is unlike others in that its drilling efficiency shows a constant score of 100 per cent. It starts doing 20 to 25 per cent better than its best competitor and then keeps on getting better while others are falling off. There is a very good reason for this.

The secret of the extraordinary speed and hard blow of the "Chicago Gatling" drill lies in its heart—that is, the valve. A hollow steel ball, hardened and ground, weighing only two ounces and with a travel of only one-eighth of an inch is the secret. The common knowledge that the lighter the valve and the shorter the travel the better the drill is certainly proved in this case.

It is the hollow steel ball acting as a valve which causes the "Chicago Gatling" drill to do such good work that users say it beats other machines easily by 25 per cent. Two ounces of hardened steel in the form of a hollow ball acting as a valve and traveling only an eighth of an inch each way is responsible for this. Other valves weighing four to ten times as much and traveling many times farther necessarily move slower and drill less.

One of the many big things about the "Chicago Gatling" drill is that dirt in the air cannot stop it or even hurt it. The steel valve cage acts as a screen for the large particles and there is no place for the smaller ones to lodge, as both the ball valve and the seats are "air washed" six or eight hundred times a minute. And once in the cylinder the dirt is almost immediately swept out into the atmosphere through the large exhaust ports in the wall of the cylinder.

Every "Chicago Gatling" drill carries with it the company's guarantee on the hollow steel ball valve—it is a guarantee against either wear or breakage for a whole year. This guarantee, of course, is only made because the valve is not only indestructible, but also wear-proof. And it means a saving to the user of at

least \$50 a year. Besides it makes for better drilling speed.

The "Chicago Gatling" drill is so speedy a driller and so economical in maintenance cost because it strikes an absolutely uncushioned blow. Traveling towards the bottom of the hole being drilled, at an unusually high speed, there is nothing in its path except the rock, which it strikes the hardest kind of blow. There is nothing to deaden or soften the blow. And yet the machine is so well balanced that the piston comes back on the return stroke without a perceptible stop and with practically the same power. That is why it cuts so fast.

A most remarkable feature of the "Chicago Gatling" drill is its powerful "pull-back." It accounts for the faster speed just as the absence of a cushion accounts for a harder blow. Most drills are weak in this respect and that partly accounts for their lower drilling capacity. The hollow steel ball is, of course, responsible for this. It throws quick and at just the right time. And nothing can prevent its doing this.

The action of the hollow steel ball valve of the "Chicago Gatling" drill is positive—and from a drilling point of view it is so well timed that it may be called perfect. Its light weight of two ounces, its short valve travel of only an eighth of an inch and the quick, sharp exhaust directly into the atmosphere without passing through tortuous or restricted ports account for the high drilling efficiency.

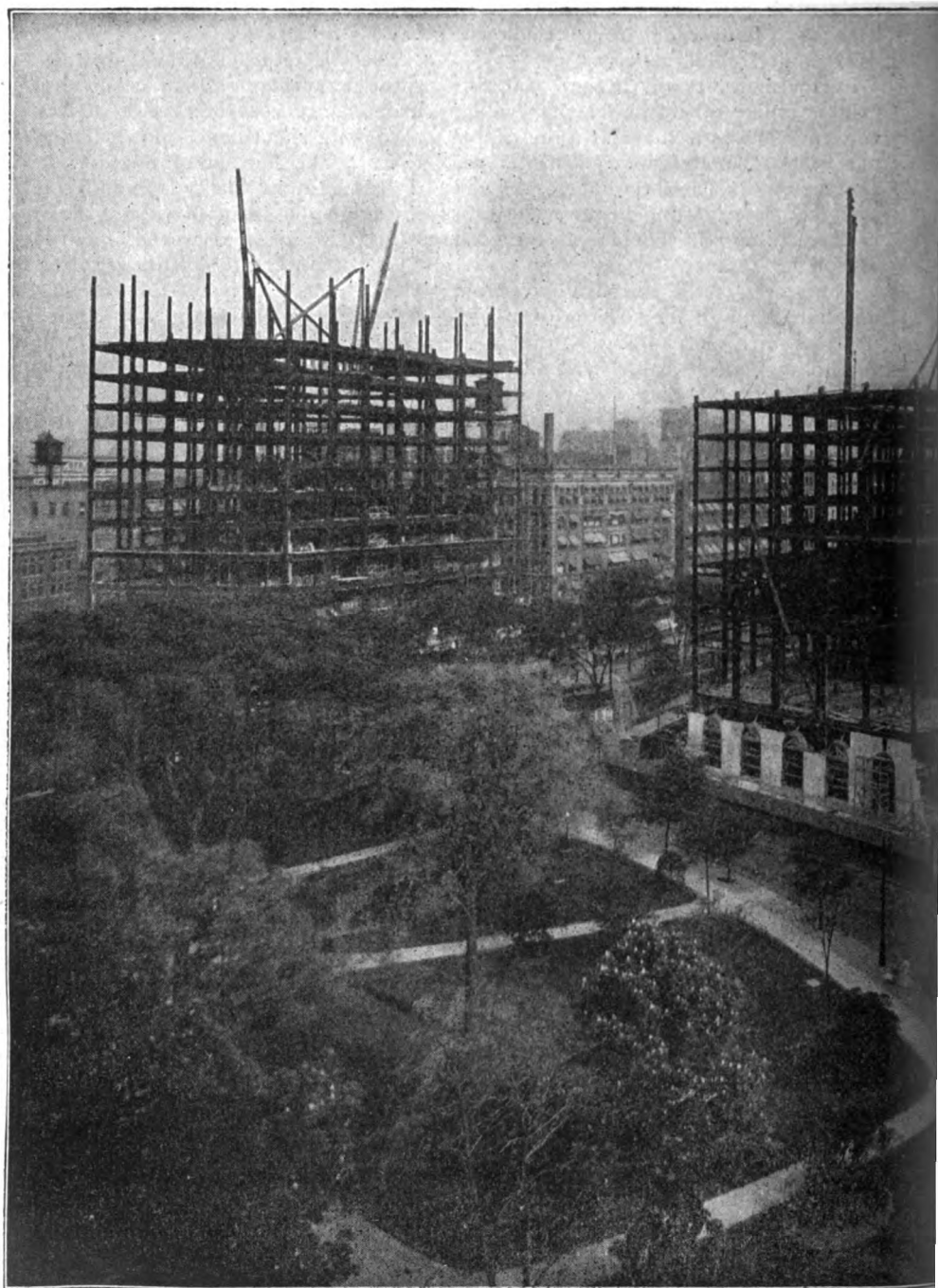
We could go on and tell you a great deal more about the "Chicago Gatling" drill but we want you to read Bulletin 152 on the subject, which tells all about it. It's worth reading if you use or are likely to use rock drills or if you are interested in any way whatever.

A Wrong Diagnosis.

Physician—"From a hasty examination, I am of the opinion that you are suffering from clergyman's sore throat."

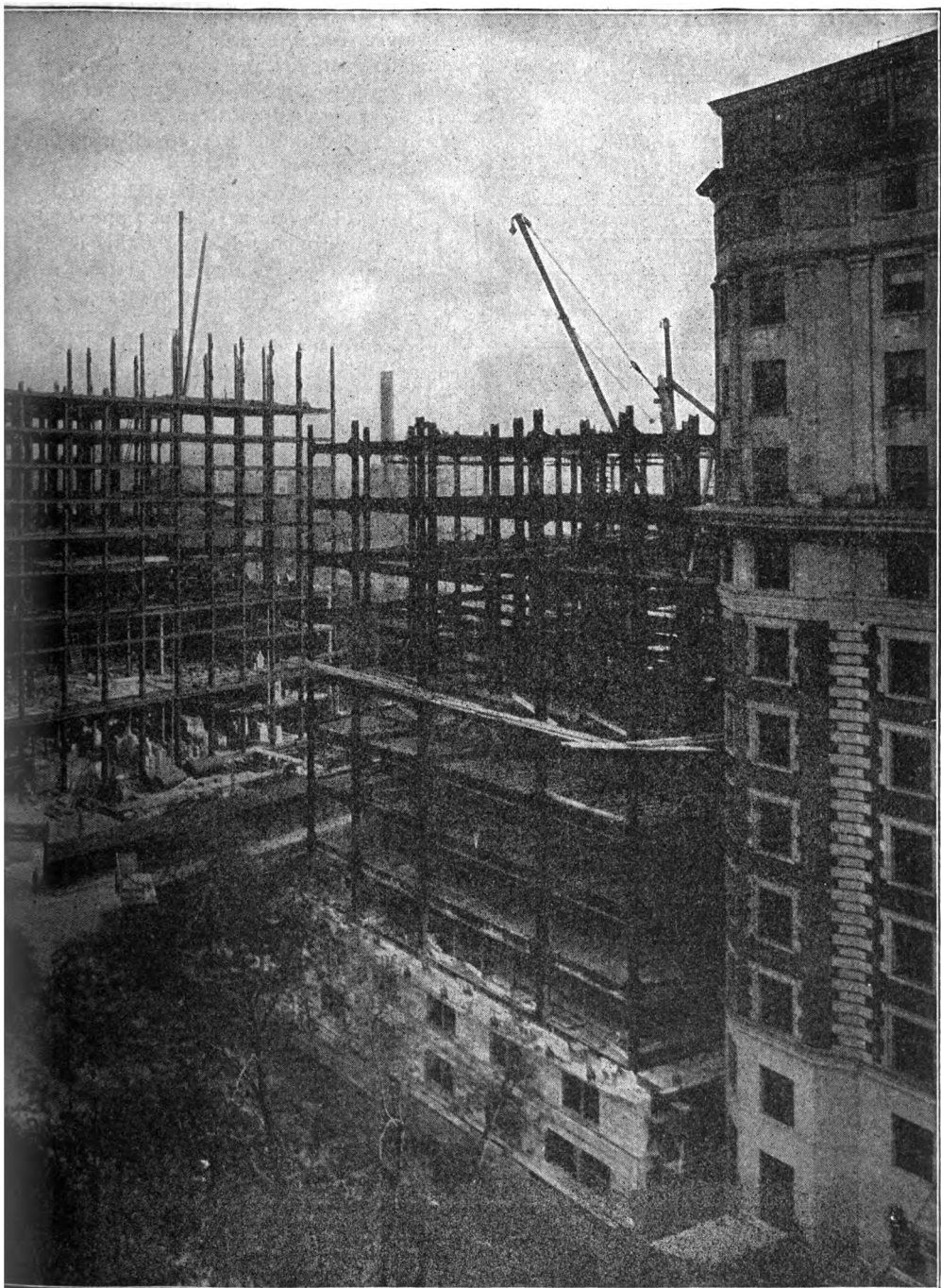
Patient—"The hell you say!"

Physician (quickly)—"But it is quite possible I am wrong—I will look again."



WHAT CAPITAL AND ENTERPRISE WITH THE AID OF PNEUMATIC TOOLS ARE DOING IN THE CITY OF DETROIT.

These four buildings (three under construction—one just completed) encircle Grand Circus Park, Detroit, and are being built with Chicago Pneumatic Tools exclusively. At the left is



the New Whitney, being erected by Languist and Illsley. In the center is the new Hotel Statler, being erected by James L. Stuart. At the right is the new addition to the Tuller Hotel, being erected by Geo. A. Fuller Co. The picture was taken from the top of the Kresge Building, just completed by Geo. A. Fuller Co. Each of these buildings is 18 stories high.

IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air
and Electrical Appliances

BY THE

IDEAL POWER PUBLISHING CO.

1014 Fisher Building

CHICAGO, U. S. A.

C. I. HENRIKSON

Editor

Vol. 11.

JULY, 1914.

No. 2.

TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year
Other Countries in Postal Union, 50 cents per year

ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our
subscription list.

Notice.

Readers of *Ideal Power* who are desirous of obtaining more information on the subjects brought up in this number are invited to fill out and return the enclosed postcard. No obligation is attached and we shall deem it a special privilege to forward, on request, any literature that may be suggested by the articles in this issue.

Chicago Gatling Does Fine Work.

One of the western agents of the Chicago Pneumatic Tool Co. reports an interview with a prominent tunnel foreman of Clear Creek, Utah, who has in operation some 7 or 8 rock drills, and who tried out a C 22 Gatling Drill: "This drill was not sent to him with the idea of his purchasing it; I simply sent it to him to get a valuable report from a man whom I consider to be the best tunnel man in Utah. I have already sent you the letter which he wrote me, and in conversation with him he states that he is sure that this is the fastest piston drill in the world; that he drilled an 8 ft. hole, using heavy steel such as is ordinarily used in the 3¼" drill, in seven minutes."

A New Use for Compressed Air.

There is nothing new about compressed air cleaning, but there is something novel about a compressor installation, when its prime purpose is the cleaning of furs in department stores.

The Jordan-Marsh Co. of Boston have recently installed a "Chicago Pneuma-

tic" Type N. S. S. compressor with Simplate valves for the sole purpose of blowing the dust, dirt and moth eggs out of their extensive stock of costly furs. Other big stores in Boston have become interested and are considering similar installations.

In cleaning furs with compressed air a nozzle is used having a 1/64 inch opening about 4 to 6 inches long and this is run over the fur to dislodge the dirt and eggs, which it does without injury to the fur.

The compressor is installed in the basement and the air piped to the fur department, where several outlets are provided for easy access.

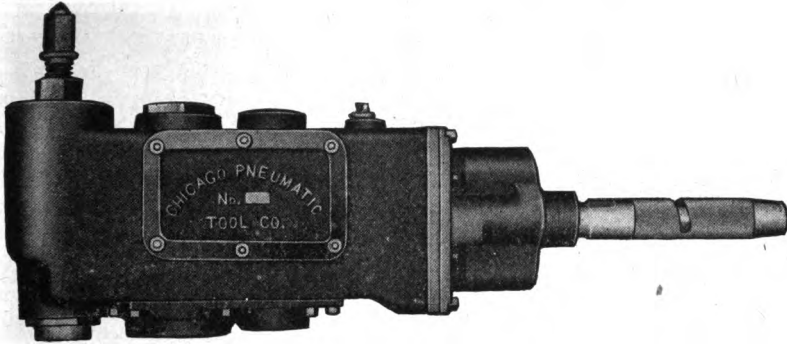
Announcement to Users of "Chicago Pneumatic" Compressors.

One of the foremost features of proven merit and permanent value, introduced in our new line of enclosed self-oiling compressors, is our patented "Simplat" automatic air inlet and discharge valve of flat disc type.

These "Simplat" valves are interchangeable with all poppet valves of earlier design, employing cages, of our manufacture. The substitution of these "Simplat" valves for the older poppet valves will increase the efficiency and decrease the power consumption of your compressor.

Designed primarily for high speeds, the valves proper are very light with large areas combined with small lift. Specially selected and treated materials render them practically indestructible. No cages for guiding the valves are required and silent operation at the highest speeds is possible without lubrication. The design is such that the valves cannot stick or fall into the cylinder. We guarantee them against defects or breakage for a period of **THREE YEARS.**

Inquiries or orders are respectfully solicited and should give the shop number of the compressor (which will be found on the name plate) and state whether inlet or discharge valves or both are desired.



Little Giant Chain Driven Corner Drill. (Fully described in Bulletin 127, Second Edition.)

Boyer Pneumatic Riveters Salute Chicago Commerce Boosters.

Just to prove that none of its rivals could exceed it in enterprise, Augusta greeted the men of the trade extension delegation of Chicago with a rap-a-tap of pneumatic riveters early one morning recently. The acquaintanceship promoters on board the Association of Commerce special doing the big loop through Dixie were looking for quiet here that they might find repose after their strenuous week of travel visiting eleven cities, but the Boyer Hammer wouldn't let 'em.

Special Convention Notice.

The committee of arrangements of the Supplymen's Association of the A. B. M. A., of which Mr. Thos. Aldcorn of the Chicago Pneumatic Tool Co. and Mr. F. B. Slocum of the Continental Iron Works are chairman and vice-chairman, respectively, are planning an elaborate form of entertainment to the members and guests of the American Boiler Manufacturers' Association at the 26th annual convention to be held in New York City Sept. 1 to 4, inclusive. A preliminary meeting was held at the Waldorf Astoria, May 12, and the regular committee meeting will be held June 2 at the Waldorf, at which time it is hoped a large number of the local supplymen will join hands with the committee in formulating plans for entertainment at the convention.

New Chain Drive Corner Drill.

The Nos. 18 and 19 Little Giant Corner or Close Quarter Drills were designed to overcome the objection arising from the intermittent action of ratchet levers in the rotation of the spindle, which is a prominent feature of the close quarter drill now on the market. In the Little Giant Nos. 18 and 19, steady, uninterrupted revolution of the drill spindle is accomplished by means of an endless silent chain. In adopting this new feature all the advantages of the ratchet type have been retained, permitting the drill to be used in the same narrow space, and within $1\frac{7}{16}$ " of the end wall or corner.

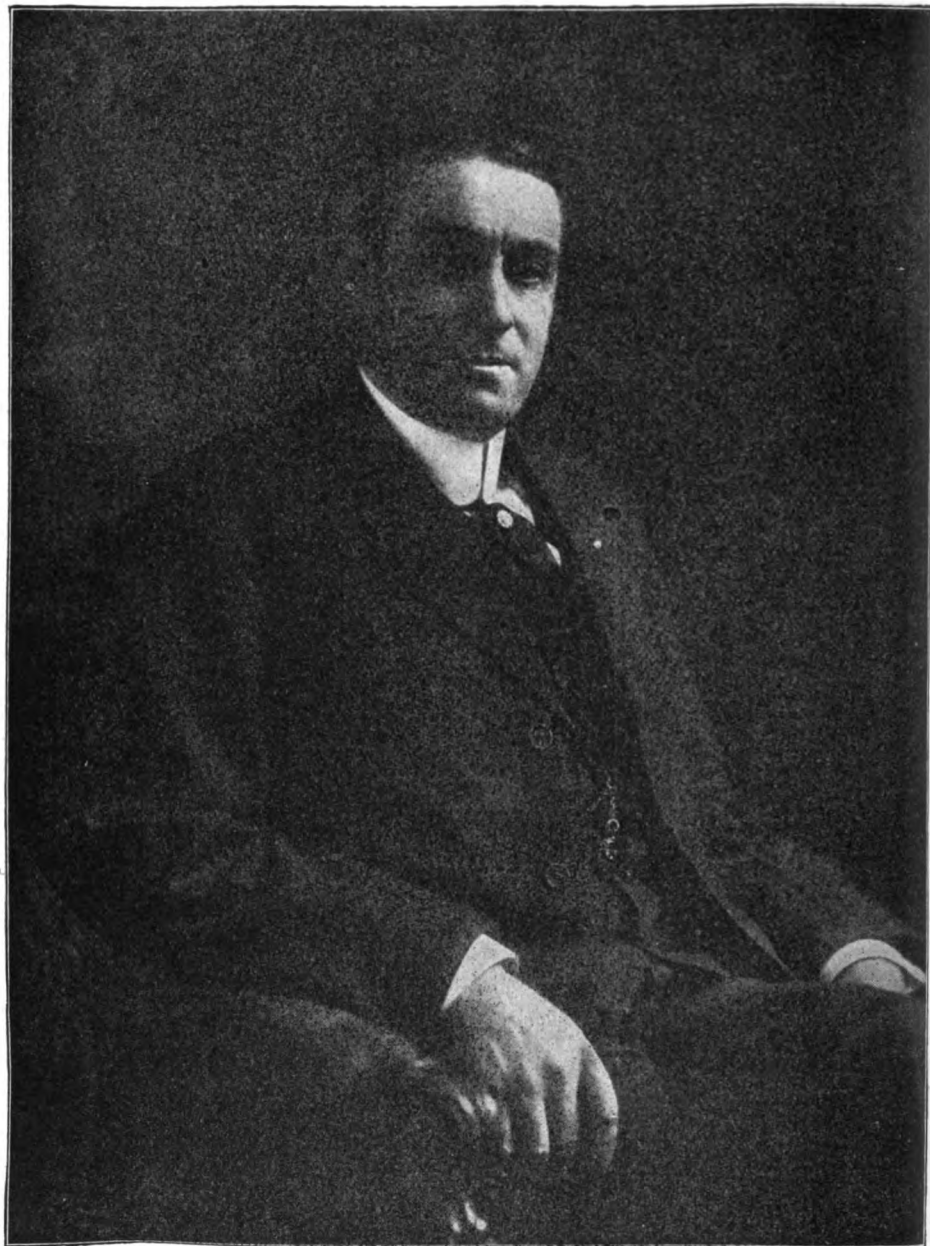
In the chain driven type of corner drill there is much less vibration than in the ratchet type owing to the steady pull of the chain, and the wear and tear on the machine is proportionately less.

Removable crosshead guides insure alignment and can be replaced with new ones when worn, which is a decided advantage over crosshead guides cast solid and integral with the case.

All bearings are either of the annular or roller type, each used where it will best serve the purpose.

Little Giant chain driven corner drills are made in two sizes and capacities, the No. 18 fitted with No. 3 and the No. 19 with No. 4 Morse taper socket.

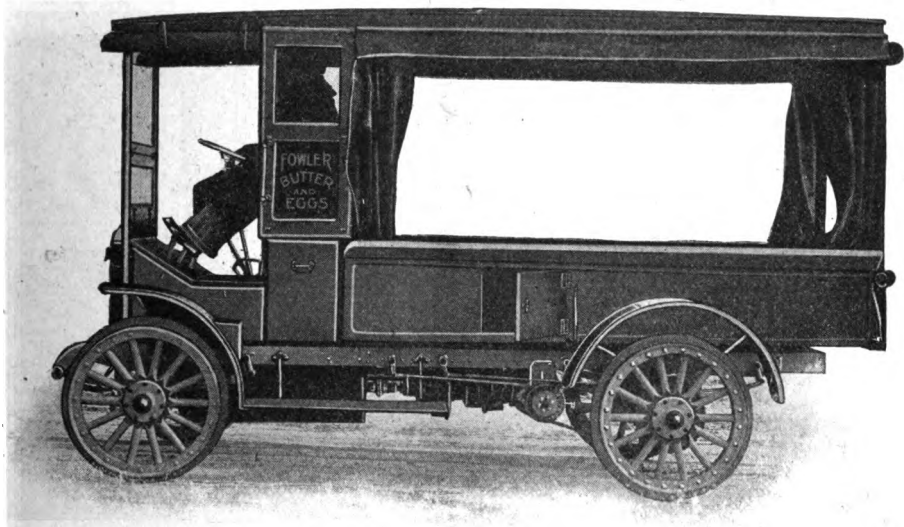
For further details see table on page 40 of Bulletin 127 (second edition), issued by the Chicago Pneumatic Tool Co.



MR. THOMAS ALDCORN.

General Eastern Sales Agent Chicago Pneumatic Tool Co.

Mr. Aldcorn is one of the pioneers in the pneumatic tool industry, having been with the Chicago Pneumatic Tool Company since the earliest days of the company. Many of our readers know him personally and will be delighted to see this good likeness of him. Mr. Aldcorn's address is 50 Church Street, New York City.



REFRIGERATOR.

This Little Giant has a "Special Four Post Canvas Top Body," 44"x114", equipped with metal ice container to carry dairy products under refrigeration, furnished with side doors to permit of easy access to ice box. Upper portion of body used for carrying eggs or other product. This car is the property of M. E. Fowler, 4515 Wallace Street, Chicago.

Motor Truck Efficiency Briefly Stated.

The economic considerations that enter into the substitution of motor trucks for horse transportation in practically every line of commercial enterprise goes deeper than most people would think, probably. That the removal of horses from city streets tends to cleanliness, to sanitation and to more efficient handling of congested traffic; that motor trucks, by their greater speed and endurance, broaden their owner's selling territory beyond what can be reached by horse service; that motor operation is more economical than horse operation, all these things are recognized, in a general way, by business men, says the American Carpet and Upholstery Journal.

The necessity of stabling horses near their work to save both time and strength going to "the job" and returning from it means a constantly increasing expenditure for housing. For in cities, and even towns, stables frequently must be located in districts of fast-raising property values. The motor truck, on the other hand, suffering no weariness of the flesh, and having from

twice to six times or even more the speed of the horse, can be housed at any distance from its working base that may be desirable for economy. Furthermore, the garage is not the unsanitary nuisance that the horse-stable is; and as a single motor truck, properly used, will do the work of from three to six two-horse teams, it is fair to calculate that the motor truck equipment required for a given amount of work will occupy no more than one-fifth the floor space required for horse equipment. This allows for the space occupied by wagons, horses, feed and so on.

Horses that are used carefully will not work more than 50 per cent of the working days of the year. It is possible to get 75 per cent of the working days out of a horse, but this is done at the expense of his endurance; he wears out more quickly. And in 90 per cent of the year's working days the motor truck will work practically twenty-four hours a day, if necessary; that is to say, it has no moods; it is never "half sick" and so to be coddled. When it is in commission, it is up to full efficiency the whole time.



This Little Giant is delivering meats in Havana, Cuba. It has a special straight panel body, 48"x108"x60" high, lined with matched lumber which is covered entirely by galvanized sheet iron and equipped with hooks inside at front and side to carry fresh meats.

**The Troy Laundry, Salt Lake City, Uses
a Fleet of Little Giants and This
Is What They Say:**

Replying to your inquiry of the 24th instant as to the results we have been obtaining from the "Little Giant" Trucks purchased from you, we are pleased to state that we purchased one Model "D" car from you July 1, 1913, after having it demonstrated to us and on July 14, 1913, we placed our order for four more Model "D's" and one Model "F."

These cars have been on constant daily operation since they were delivered to us and the results obtained from them have been very satisfactory.

We have not been to any expense for repairs owing to defective material or workmanship. The cars are simple to handle and our drivers have no difficulty whatever in learning to run them.

We have found them to be economical both in fuel consumption and maintenance. We have also passed through the winter months and muddy season with less trouble than we anticipated.

In closing we desire to state that we are well pleased with our "Little Giants" and would not hesitate to recommend this car to any prospective purchaser.

Yours very truly,
TROY LAUNDRY,
By J. H. Brown, Mgr.

**What the Borough Municipal Electric
Works, Wallingford, Conn., Think
of Little Giant Trucks.**

Replying to your recent letter regarding our opinion of our auto delivery truck, we have used automobile delivery trucks since 1906 and would not think of getting along without them. At the present we have in service two trucks and one runabout. Our lines extend approximately $3\frac{1}{2}$ miles in each direction. We cover much very hilly country. We have had no serious trouble, and find the autos much cheaper and more suited for our work than horses.

We purchased one of the first models made by the Chicago Pneumatic Tool Co. of Chicago, Ill. This truck has been in constant use by our line department.



It has been driven and cared for by the linemen, doing the heaviest kind of work and receiving much indifferent care and attention. It is giving us as good service now as the first year. Last year we purchased one of the latest models and have been well pleased with it. This truck we hold as an emergency truck. This truck is of much more rugged design and construction, and as nearly fool proof as possible to make a truck of this type.

We consider this truck one of the most dependable made and cannot recommend it too highly or our business dealings with the makers.

Very truly,

(Signed) A. L. PIERCE,
Supt. & E. E.

Do You Know Her?

It was the custom of the congregation to repeat the twenty-third psalm in concert and Mrs. Armstrong's notion of joining was to keep about a dozen words ahead all the way through.

A stranger was asking one day about Mrs. Armstrong.

"Who," he inquired, "was the lady who was already by the still waters while the rest of us were lying down in green pastures?"

The Little Giant and Votes for Women.

Miss Mary Brennan of Seattle and Mrs. Mary K. Glagett, clad in white suits and wearing the suffrage colors, carried huge posters and pails of slop-py paste and covered every inch of available poster space in Washington, D. C., with bills announcing the suffrage parade, in support of the Bristow-Mendell constitutional amendment, on May 9.

They wanted to produce an impression. They wanted to strike a popular note. They decided the Little Giant was the truck for them and it made good. We are indebted to *Leslies' Weekly* for the cut.

Hog in No Hurry.

A Southerner, riding through the White mountains, came up with Mr. Shaw leisurely driving a herd of pigs.

"Where are you driving the pigs to?" asked the rider.

"Out to pasture 'em a bit."

"What for?"

"To fatten 'em."

"Isn't that pretty slow work to fatten 'em on grass? Where I come from we pen them up and feed them on corn. It saves a lot of time."

"Yaas, I s'pose so," said Mr. Shaw. "But—what's time to a hawg?"



Making Drift Pins With Boyer Riveting Hammers.

This photo shows how the No. 80 Boyer hammer is being used in making drift pins. In this manner a blacksmith and helper made 160 15/16 drift pins in eight hours at a cost of 2½ cents per pin. Where it is necessary to have a blacksmith on structural iron jobs to dress tools he has spare time to make drift pins, and this is one of the ways in which his spare time can be made to pay.

An old rivet set was made into a swedge to fit the air hammer and a common swedge block was used to fasten an arm to hold the air hammer plumb over bottom swedge as shown in photo.

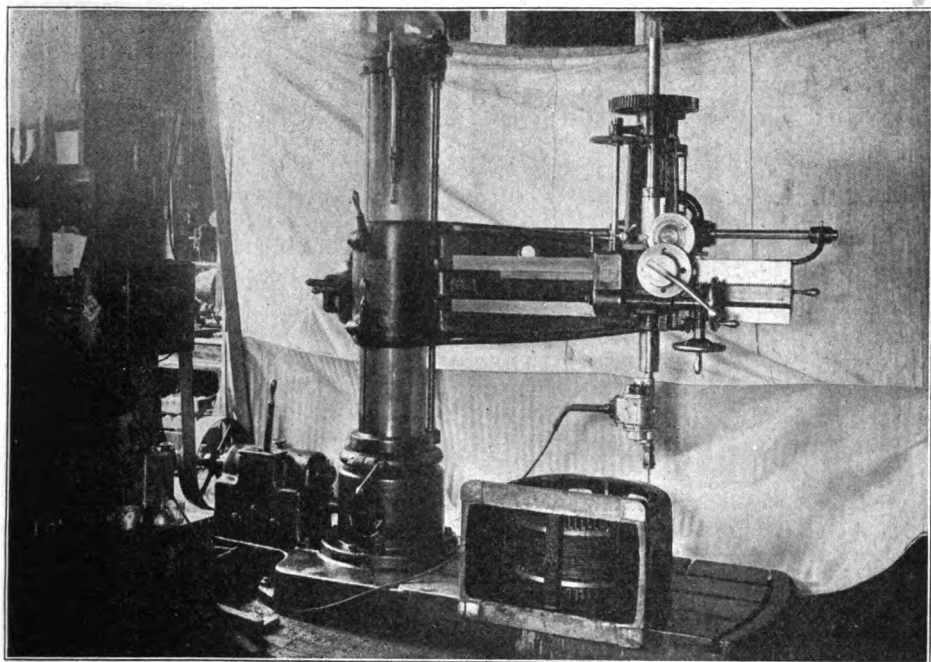
Mr. Geo. Burtscher of the Kelly-Atkinson Construction Co. is the originator of this stunt. He is shown at the left in the photo.



Using Boyer Riveting Hammer for Driving Drift Bolts.

The photograph shows a No. 90 Boyer Hammer driving a 1½" diameter drift bolt 7' long, 1/16" drift and upon which the last two feet were driven at the rate of a foot in 85 seconds. The operators at the Southern Pacific Company's shipyards were highly elated over the success they had with the No. 90 Hammers, much of which was due to the fact that the No. 90 Hammer when driving the drift bolt did not flatten or spread the head of the drift.

Three of the No. 90 Boyer Hammers, in conjunction with a great number of the Little Giant Wood Boring machines, were used in the construction of the Str. "CONTRA COSTA," the hull for which was recently launched at Oakland, Cal. The "CONTRA COSTA" is probably one of the largest car-carrying



ferry boats in the country and is of the following dimensions:

Over-all, 433' 4".

Length over transom, 420'.

Width, 116'.

Folded beam, 66' 6".

Depth, 19' 5".

In the hull alone there was used 2,700,000 feet of lumber.

These three No. 90 Boyer Hammers drove over 160,000 pounds of drift bolts, this amount not including the galvanized spikes used in the hull.

Duntley Electric Drill Used on Radial Drill.

The accompanying illustration shows a new application of the Duntley Electric Drill for drilling comparatively small holes on a large radial drill. A considerable amount of power is required to drive the modern radial drilling machines and when drilling small holes it is necessary to operate at the highest possible speed, with excessive wear and tear on a very expensive tool. It is frequently necessary to drill small

holes in large pieces of work which can only be gotten under the larger drilling machines. By equipping the Duntley Electric Drill with a Morse taper shank, which will fit into the socket on the spindle of the radial drill, it is not necessary to run the radial drilling machine itself, but simply operate the small motor in the Duntley drill, using the feed mechanism, of course, of the radial drill. In one of the large machine shops where this outfit is in use a very great saving in power is reported, and the users figure that a great saving in wear and tear on the drill itself is effected. The Duntley drill can be applied to the radial drill just as quickly and easily as an ordinary twist drill can be put into the socket.

Another Excuse.

A boy who had been absent from school for several days returned with his throat carefully bandaged, and presented this note to his teacher: "Please don't let my son learn any German today, his throat is so sore he can hardly speak English."

A Full Day.

At a recent dinner given to the Giants and the White Sox after their world-circling tour, one of the speakers said that a friend of his named Cassidy went to mass and heard the priest preach on the "Judgment Day." After the services he waylaid the clergyman.

"Father," inquired Cassidy, "I want to ask you something. You say that when the trumpet blows on 'Judgment Day' everybody who ever lived in this world will come before the 'Judgment Seat' to be judged for their sins on earth?"

"I so stated."

"Will Adam and Eve be there?"

"Undoubtedly."

"And Cain and Abel?"

"To be sure."

"And Jack Johnson and Jim Jeffries?"

"I assume so."

"And Ban Johnson and Charley Murphy?"

"They will."

"And the A. O. H.'s and the A. P. A.'s?"

"I told you everybody would be there."

"One thing more: Will Hogan that sued me in the magistrate's court last week and me both be there?"

"I tell you, yes."

"Then there'll be dam' little judging done the first day!" said Cassidy.

A Chest of Eggs.

"When I arose to speak," related a martyred statesman, "some one hurled a base, cowardly egg at me and it struck me in the chest."

"And what kind of an egg might that be?" asked a fresh young man.

"A base, cowardly egg," explained the statesman, "is one that hits you and then runs."

Among Our Wives.

"Dear me, it's so hard to buy for a man."

"Yes. I hate to spend the money that way, too."

His Seven Ages.

The seven ages of man have been well tabulated by somebody or other on an acquisitive basis. Thus:

First Age—Sees the earth.

Second Age—Wants it.

Third Age—Hustles to get it.

Fourth Age—Decides to be satisfied with only about half of it.

Fifth Age—Becomes still more moderate.

Sixth Age—Now content to possess a six-by-two strip of it.

Seventh Age—Gets the strip.—Louisville Courier-Journal.

Resourcefulness.

"Waiter!" called a diner at a local club, "come here at once! Here's a hook-and-eye in this salad!"

"Yesser, yesser," said the waiter, grinning broadly. "Dat's a paht of de dressing, sahl!"

The Modern Maid.

Mistress: "Oh, Mary, didn't you know you always ought to bring me the letters on a salver?"

New Maid: "Yes'm, I knew all right; but I didn't know you did!"

He Wasn't a Lump.

She weighed 224 if she weighed an ounce, and she did weigh an ounce.

The whole rink shook and rumbled as she struggled round in her efforts to master the whirling art.

Suddenly—a terrific thud—a groan—and there, piled up upon the boarding lay a heap of overbalanced femininity.

The woman opened her eyes.

"You will have to wait but a moment, madam," politely remarked the manager. "We have just sent for the crane. I trust you are not hurt?"

"N-n-no, I don't think so!" she gasped bravely back. "But, oh, there are some dreadful lumps in your floor!"

"Lumps be hanged, madam!" growled a half smothered voice from underneath. "I'm not a lump; I'm one of the attendants!"



A fatted calf maketh a full stocking.

Society weddings come under the head of fashionable ties.

Most of us can see a sorrow twice as far away as a blessing.

The man who lacks push is willing to take things as they come.

Some folks get what they want by pretending not to want it.

Dreaming sweet dreams comes as natural to a girl as a fly to a plate of butter.

Misfortune is no respecter of persons—and neither is fortune, for the matter of that.

It's all right to decorate an old house with paint, but a cynical old face—well, that's different.

With all the new-fangled what-nots and the patented time-savers, thinking still has to be done in the good old-fashioned way.

Enough bananas were imported into the United States last year to furnish peelings sufficient to give the people one hundred slides per capita.

A word to the boys: If you don't like the firm that is working for you, fire the boss and reorganize; otherwise, sit still in the boat.

Kind words and bald heads never dye.

Silence is the wisest argument of an ignorant man.

Many a harmless looking bottle contains a lot of fish stories.

Gold may be the key to society, but poverty is the strongest bar.

And one good action is worth more than a hundred good intentions.

After talking to some people we ponder deeply on the high price of ivory.

With one foot in the grave it doesn't take a man very long to get there with both feet.

One way not to be happy is to have more time and money than you know what to do with.

Love is considered the ruling passion, but occasionally the almighty dollar administers a terrific jolt.

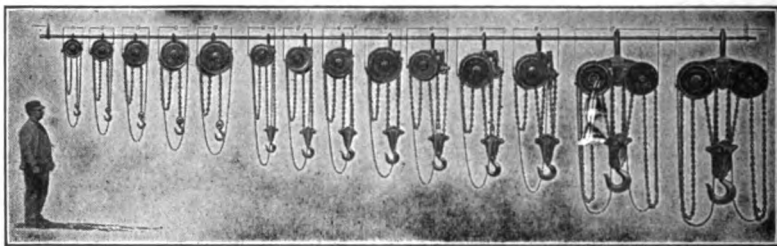
A man occasionally interferes with the affairs of a woman without getting the worst of it—in a novel.

Girls, if a young man doesn't know how to make love, it is neither arduous nor unpleasant to teach him.

A maid of 20 tries to act like a widow of 40, a widow of 40 tries to act like a maid of 20—and there you are.

A GUARANTEE against DEFECTS for the Life of the Block goes with every

Reading ^{Multiple Gear} Chain Block



Self-Lubricating—works in any position—works in all kinds of weather.
Try one 30 days—return at our expense if not satisfactory.

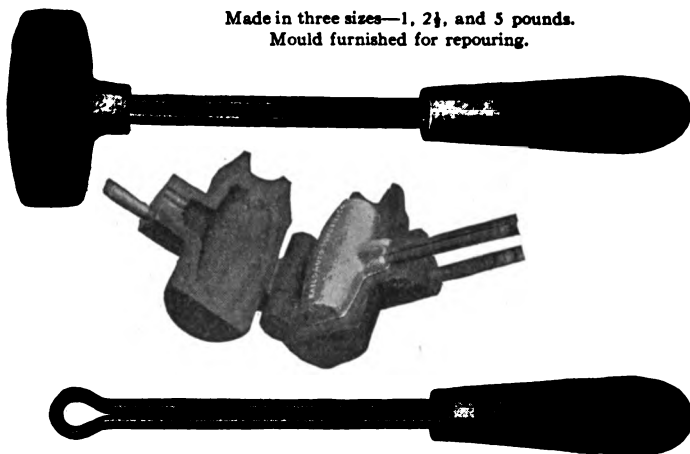
Any Chicago Pneumatic Tool Salesman will take your order or we will send direct.

Reading Chain Block Company

Reading, Pa.

If You Must Knock Use Soft Hammers

Made in three sizes—1, 2½, and 5 pounds.
Mould furnished for repouring.



SOLD BY THE
CHICAGO PNEUMATIC TOOL CO.

1014 Fisher Building,
CHICAGO

Branches Everywhere

50 Church Street
NEW YORK

When writing to advertisers please mention Ideal Power.

Moving Pictures Tell the Story of the

"Rockford"

Here you see a No. 4 ROCKFORD MOTOR CAR with a load of eight men with their picks, shovels, and other tools required for section work.

They are on their way, going at the rate of twenty miles per hour. They are in a hurry, and every moment they save in getting to their work is a saving of dollars to the railroad company.

The speed with which the ROCKFORD MOTOR CAR brings them to the job is an inspiration to get to work quickly, and do their work diligently. They become conscious of a certain dignity, and work harder and with more snap and "ginger" than they possibly could after pumping a handcar for several miles. But you see how they are skimming along. The ROCKFORD has a way of "getting there."

It's the ROCKFORD engine that makes it possible for the ROCKFORD MOTOR CAR to cover ground so rapidly, and **SPEED**, in these days of hustle and rush, is a factor that can not be ignored. It is by your **SPEED** you will be judged when the annihilation of space is your object.

And the ROCKORD MOTOR CAR has speed; for see how it is rapidly disappearing in the distance.

When the virtues of the ROCKFORD MOTOR CAR are considered, the car itself is more eloquent than we could ever hope to be, and it is with the car itself that we would like to have you acquainted.

But twenty miles an hour is no snail's pace, and the ROCKFORD MOTOR CAR has disappeared from view.

Have you Catalog 43? Ask for it.

Chicago Pneumatic Tool Co.

1014 Fisher Bldg.
CHICAGO

50 Church Street
NEW YORK

Branches Everywhere

Chicago Pneumatic Tool Company

BULLETIN NO. 10 FEBRUARY 1914

Hand Drills and Portable
CompressorsChicago Pneumatic Tool Company
MINING DEPARTMENT
FISHER BUILDING 50 CHURCH STREET
CHICAGO NEW YORK

CHICAGO PNEUMATIC TOOL COMPANY

BULLETIN NO. 11 FEBRUARY 1914

Chicago Portable Mine Hoist

CHICAGO PNEUMATIC TOOL COMPANY
MINING DEPARTMENT
FISHER BUILDING 50 CHURCH STREET
CHICAGO NEW YORK

CHICAGO PNEUMATIC TOOL COMPANY

BULLETIN NO. 12 FEBRUARY 1914

Chicago Coal Drills

CHICAGO PNEUMATIC TOOL COMPANY
MINING DEPARTMENT
FISHER BUILDING 50 CHURCH STREET
CHICAGO NEW YORK

CHICAGO PNEUMATIC TOOL COMPANY

BULLETIN NO. 13 FEBRUARY 1914

"Chicago Slogger" Drills

CHICAGO PNEUMATIC TOOL COMPANY
MINING DEPARTMENT
FISHER BUILDING 50 CHURCH STREET
CHICAGO NEW YORK

Order these bulletins by
number, please:

ROCK DRILLS AND HAND DRILLS

- 148. Chicago Valveless Hand Drills.
- 149. Chicago Portable Mine Hoist.
- 150. Chicago Coal Drills.
- 151. Chicago Slogger Rock Drills.
- 152. Chicago Gatling Drills.
- 153. Chicago Sinker.
- 154. Chicago Stoper.
- 172. Chicago Plug and Feather Drill.

Address

CHICAGO PNEUMATIC TOOL CO.,

1014 Fisher Bldg., Chicago
50 Church St., New York
Branches Everywhere

CHICAGO PNEUMATIC TOOL COMPANY

BULLETIN NO. 14 FEBRUARY 1914

"Chicago Gatling" Drills

CHICAGO PNEUMATIC TOOL COMPANY
MINING DEPARTMENT
FISHER BUILDING 50 CHURCH STREET
CHICAGO NEW YORK

CHICAGO PNEUMATIC TOOL COMPANY

BULLETIN NO. 15 FEBRUARY 1914

The "Chicago Sinker"

CHICAGO PNEUMATIC TOOL COMPANY
MINING DEPARTMENT
FISHER BUILDING 50 CHURCH STREET
CHICAGO NEW YORK

CHICAGO PNEUMATIC TOOL COMPANY

BULLETIN NO. 16 FEBRUARY 1914

The "Chicago Stoper"

CHICAGO PNEUMATIC TOOL COMPANY
MINING DEPARTMENT
FISHER BUILDING 50 CHURCH STREET
CHICAGO NEW YORK

CHICAGO PNEUMATIC TOOL COMPANY

BULLETIN NO. 17 FEBRUARY 1914

No. 5 Chicago Plug and Feather Drill

CHICAGO PNEUMATIC TOOL COMPANY
MINING DEPARTMENT
FISHER BUILDING 50 CHURCH STREET
CHICAGO NEW YORK

When writing to advertisers please mention Ideal Power.

Digitized by Google

THE CHICAGO PNEUMATIC TOOL COMPANY

MANUFACTURE THE FOLLOWING
PNEUMATIC TOOLS, APPLIANCES, ETC.

After Coolers	Grinders, Portable Electric
Air Compressors	Hammers, Riveting
Air Economizers	Hammers, Chipping and
Air Forge, Chicago	Calking
Air Motors	Hammers, Stone
Air Receivers	Hoists, Duntley Electric
Air Jacks	Hoists, Pneumatic Geared
Airoilene	Hoists, Straight Lift
Airoilene Grease	Holders-on
Angle Gears, Little Giant	Hose, Special High Grade
Angle Gears, Boyer	Hose Clamp Tool
Annealing Machines	Hose Couplings (Universal)
Armour Scaling Machines	Inter-Coolers
Automatic Oiling Devices	Magnetic Old Man
Bell Ringers, Little Giant	Oil Driven Compressors
Blow-off Cocks, Little Giant	Oil Engines
Chucks, Drill	Painting Machines
Chucks, Expanding	Pipe Bending Machines
Commercial Car, Cranes	Pneumatic Saws
Drift Bolt Drivers	Pneumatic Plate
Drills, Boyer	Straighteners
Drills, Keller	Railway Motor Section Cars
Drills, Little Giant	Reamers
Drills, Rock	Reheaters
Drilling Stands	Rivet Busters
Elevators	Riveters, Jamb
Electric Drills, Duntley	Riveters, Yoke
Electric Grinders, Duntley	Riveters, Compression
Engineers' Valves	Sand Rammers
Flue Cutters, Chicago	Sand Sifters
Flue Rollers, and Ex-	Speed Recorders
panders, Little Giant	Staybolt Chucks
Gas Engines	Stone Dressers
Gasoline Driven Com-	Staybolt Nippers
pressors	Vacuum Pumps
Gasoline Engines	Winches, Portable

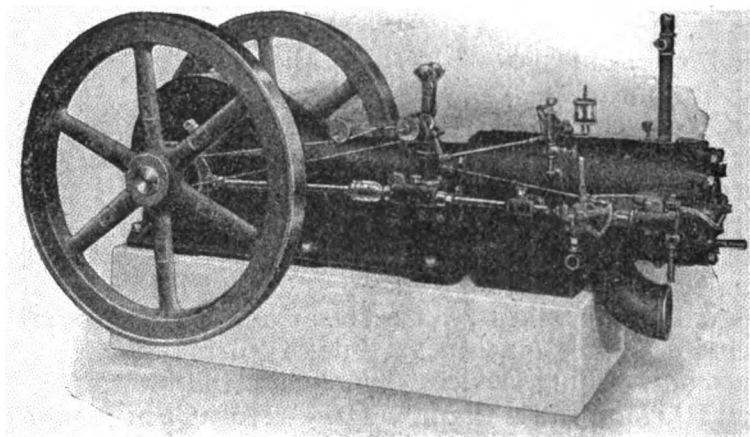
"Giant" Fuel Oil Engine

For Pumping, Electric Lighting and all Power Purposes

10 H. P. for 3 Cents Per Hour

Cheaper than Electricity

Better than Steam



"GIANT" FUEL OIL ENGINE

Will Run on

Crude Oil, Fuel Oil, Engine Distillate, Residuum, Kerosene, Alcohol, Naphtha, Sol Oil, Gasoline.

Has No

Valves, Carburetor, Magneto, or other Electric Firing Devices.

Has

Valveless Two Cycle Power Cylinder, Governed Fuel Injection, Hot Plate Ignition, Self-Oiling Lubrication, Crosshead Construction, Perfect Scavenging, Rugged Enclosed Frame, Balanced Cranks.

Eight Sizes—12 to 90 Horse Power

Prices and information on request

Chicago Pneumatic Tool Co.

**1014 Fisher Bldg.
Chicago**

**Agencies and Branches
Everywhere.**

**50 Church Street
New York**

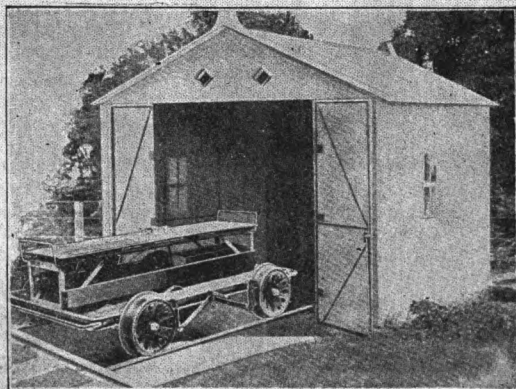
Digitized by Google

IDEAL POWER



**Ruby
All-Steel
Sectional
Buildings
for
All
Purposes**

See pages 84-85



Ruby Sectional All-Steel House for Rockford Railway Motor Car



PUBLISHED MONTHLY BY
Chicago Pneumatic Tool Company
CHICAGO NEW YORK

Digitized by Google

Chicago Pneumatic Tool Company

General Office, Fisher Bldg.
CHICAGO

Eastern Office, No. 50 Church St.
NEW YORK

BRANCH OFFICES

Boston: 191 High Street	Louisville, Ky., 31 Todd Bldg.
Birmingham: 634 Brown-Marx Bldg.	Marquette, Mich.: Lake Shore Eng. Wks.
Buffalo: 503 Ellicott Square Bldg.	Philadelphia: 1740-42 Market St.
Cincinnati: 1008 Mercantile Library Bdg.	Pittsburgh: 10 and 12 Wood St.
Cleveland: 1241 E. 49th St.	Portland, Ore.: 46-48 Front St.
Cleveland: 2122 Euclid Ave.	Richmond, Va.: 1004 Mutual Bldg.
Denver: 1037 East 20th Ave.	Salt Lake City: 117-119 W. 2nd South St.
Detroit: 547 Woodward Ave.	Seattle: 122 King St.
El Paso: 303 San Francisco St.	Spokane: Cor. R. R. and Wall St.
Erie, Pennsylvania	St. Louis: 813-19 Hempstead St.
Franklin, Pennsylvania	St. Paul: Pioneer Bldg.
Los Angeles: 241-243 So. Los Angeles St.	San Francisco: 71 First St.

FOREIGN

Canada: { Montreal, Canadian Pneumatic Tool Co.
The Holden Co., Ltd., Montreal, Toronto, Winnipeg.

British Columbia: Vancouver, Holden Co., Ltd., 429 Pendar St., L. L. Johnson, Rep.

Mexico: Mexico City, The General Supply Co., Av. Isabel La Catolica, No. 51.

Northern Mexico: (Sonora and Chihuahua), H. A. Carpenter & Bro, El Paso, Tex

Great Britain: { London, The Consolidated Pneumatic Tool Company
Ltd., 9, Bridge Street, Westminster, S. W.

Spain: {

Portugal: {

France: Paris, Anciens Etablissement Glaenger & Perreaud 18-20 Faubourg du Temple.

Belgium: Brussels, The Consolidated Pneumatic Tool Co., Ltd., 22 Chaussee de Forest, Porte de Hal.

Italy: Milan, The Consolidated Pneumatic Tool Co., Ltd., via A Cappellini 7.

Germany: {

Austria Hungary: {

Balkan States: { Berlin, Internationale Pressluft & Elektrizitäts-Gesellschaft m. b. H. Berlin C. 54, Weinmeisterhof, Weinmeisterstrasse No. 14.

Norway: {

Sweden: {

Holland: {

Switzerland: {

Denmark: {

Russia: { St. Petersburg, Phoenix Engineering Works Co., Ltd., Polustrovskaya Quay No. 39.

India: { Bombay, Consolidated Pneumatic Tool Co., Ltd., Rampart Row, Fort.
Calcutta, The Consolidated Pneumatic Tool Co., Ltd., 8 Lal Bazar St.

Japanese Empire: Tokyo, Osaka, Seoul, Dairen, The F. W. Horne Co.

Philippine Islands: Manila, Frank L. Strong Machinery Co., 105 Escolta.

Australia: Sydney, Henry W. Peabody & Co.

New Zealand: Wellington, Henry W. Peabody & Co.

South America: Buenos Aires, Argentina, Evans, Thornton & Co.

South Africa: { Johannesburg, The Consolidated Pneumatic Tool Co., Ltd.,
3 and 9 Cullinan Buildings.

BULLETIN DIRECTORY

Requests for these bulletins should be directed to our Chicago or New York offices or to our nearest branch as shown on inside front cover.

PNEUMATIC TOOLS

- 121... Pneumatic Rammers and Foundry Appliances.
- 124... Pneumatic Riveting, Chipping, Calking and Stone Hammers.
- 125... Pneumatic Yoke, Jam and Shell Riveters, Holders-on, Drift Bolt Drivers, Rivet Busters.
- 126... Compression Riveters.
- 127... Pneumatic Drills, Corner Drills, Reamers, Wood Bore, Flue Rolling and Tapping Machinery and Grinders.
- 128... Miscellaneous equipment for Pneumatic Drills, viz: Chucks, Twist Drills, Reamers, Augers, Flue Cutters, Flue Expanders, Angle Gears.
- 129... Hose, Hose Couplings and Hose Clamp Tools.
- 130... Lubrication of Pneumatic Tools.
- 131... Miscellaneous Tools, viz: Pipe Benders, Air Forge, Bolt Nipper, Drilling Stands, Blow-off Cocks, Bell Ringers, Drill Repair Vises, Painting Machines.
- 132... Pneumatic Motors and Pneumatic Geared Hoists.
- 133... Cylinder Air Hoists and Jacks.

ELECTRIC TOOLS

- E-22... Heavy Duty Electric Drills, Alternating Current.
- E-25... Electric Hoists.
- E-29... Duntley Electric Grinders.
- E-31... Duntley Electric Drilling Stands.
- E-32... Duntley Track Drills.
- E-33... Heavy Duty Electric Drills, Direct Current.
- E-34... Duntley Electric Hammer Drill.
- E-35... Duntley Universal Electric Drills.

AIR COMPRESSORS AND FUEL OIL ENGINES

- 34-A.. Class "G" Steam Driven "Chicago Pneumatic" Compressors.
- 34-B.. "Chicago Pneumatic" Power Driven Compressors.
- 34-C.. "Chicago Pneumatic" Gasoline and Fuel Oil Engine Driven Compressors.
- 34-D.. "Chicago Pneumatic" Corliss Compressors, Steam Driven.
- 34-F.. Design and Construction Class "G" "Chicago Pneumatic" Compressors.

- 34-G.. Air Receivers, Aftercoolers, Reheaters, etc.
- 34-H.. General Instructions for Installing and Operating "Chicago Pneumatic" Compressors.
- 34-L.. General Pneumatic Engineering Information.
- 34-N.. Class N-SS and N-SB Single Enclosed Compressors.
- 34-O.. Instructions for the Installation and Care of "Chicago Pneumatic" Gasoline Driven Air Compressors.
- 34-P.. Class M-CB and M-CE New Enclosed Type Self-Oiling "Chicago Pneumatic" Power Driven Compressors.
- 34-R.. Class L-SS and L-SB New Enclosed Type Self-Oiling "Chicago Pneumatic" Compressors.
- 34-S.. Small Power Driven Compressors.
- 34-T.. Class "M" Corliss Enclosed Type Self-Oiling Four Valve "Chicago Pneumatic" Steam Driven Compressors.
- 34-W.. Class A-O Fuel Oil Engines.

ROCK DRILLS AND HAND DRILLS

- 148.. Chicago Valveless Hand Drills.
- 149.. Chicago Portable Mine Hoist.
- 150.. Chicago Coal Drills.
- 151.. Chicago Slogger Rock Drills.
- 152.. Chicago Gatling Drills.
- 153.. Chicago Sinker.
- 154.. Chicago Stopper.
- 172.. Chicago Plug and Feather Drill.

LITTLE GIANT TRUCK

- 160.. Four Page Specifications.
- 162.. \$10,000 and an Idea.
- 163.. What They Say.
- 165.. Model H Chauffeur.
- 187.. Comparison Horse and Wagon with Little Giant Delivery.
- 190.. Put Your Ear to the Ground and Listen.

ROCKFORD and MISCELLANEOUS

- 37.. Stone Carving Tools and Stone Dressers.
- 42.. Boyer Speed Recorder.
- 43.. Rockford Railway Motor Car.
- 117.. Lubrication of Rockford Cars.
- 119.. Operation of Rockford Cars.
- 166.. Boyer Speed Recorder with Clock Attachment.
- 167.. Zerbee Safety Valve Discharger Register.

CHICAGO PNEUMATIC TOOL CO.

1014 Fisher Bldg., CHICAGO Branches Everywhere 50 Church St., NEW YORK

When writing to advertisers please mention Ideal Power,

616491A

CONVENTION DATES.

March 15-19, 1915—National Railway Appliances Association at Chicago.

March 16-18, 1915—American Railway Engineering Association.

May 4-7, 1915—Air Brake Association at Hotel Sherman, Chicago.

May 17, 18, 19, 1915—Railway Storekeepers' Ass'n at Hotel Sherman, Chicago.

May 17-20, 1915—The International Railway Fuel Ass'n at Hotel La Salle, Chicago.

May 20-21, 1915—American Association of Railroad Superintendents at San Francisco.

May 26 to 28, 1915—Master Boiler Makers' Ass'n at Chicago.

June 9-11, 1915—American Railway Master Mechanics' Ass'n at Atlantic City, N. J.

June 14-16, 1915—Master Car Builders' Ass'n at Atlantic City, N. J.

July 14-17, 1915—International Railway General Foremen's Ass'n at Sherman House, Chicago.

Aug. 17, 1915—International Railroad Master Blacksmiths' Ass'n at Philadelphia.

Sept. 14-16, 1915—Roadmasters' and Maintenance of Way Ass'n at Chicago.

October, 1915—American Electric Railway Ass'n at San Francisco.

October, 1915—American Electric Railway Manufacturers' Ass'n at San Francisco.

October 19-21, 1915—American Railway Bridge and Building Ass'n at Detroit, Mich.

June, 1915—International Railway Congress at Berlin, Germany.

ENGINEERING SOCIETIES, ETC.

American Association of Railroad Superintendents—Secretary, E. H. Harman, St. Louis, Mo.

American Concrete Institute—Secretary, Edw. E. Krauss, Harrison Bldg., Philadelphia, Pa.

American Electric Railway Engineering Association—Secretary-Treasurer, E. B. Burritt, 29 W. 39th St., New York, N. Y.

American Highway Association—Executive Secretary, I. S. Pennybacker, Colorado Bldg., Washington, D. C.

American Institute of Electrical Engineers—President, Paul M. Lincoln, care of W. B. & M. Co., Pittsburgh, Pa.; Secretary, F. L. Hutchinson, 33 W. 39th St., New York.

American Institute of Mining Engineers—Secretary, Bradley Stoughton, 29 W. 39th St., New York City.

American Mining Congress—Secretary, J. F. Callbreath, Jr., 1021 Munsey Bldg., Washington, D. C.

American Order of Steam Engineers—Supreme Chief Engineer, J. W. Palrent, Philadelphia, Pa.; Supreme Corresponding Engineer, Edw. A. Reboul, 1110 Earl St., Philadelphia, Pa.

American Railway Engineering Association—Secretary, E. H. Fritch, 1011 Karpen Bldg., Chicago, Ill.

American Road Builders' Association—Secretary, E. L. Powers, 150 Nassau St., New York.

American Society of Civil Engineers—Secretary, Chas. Warren Hunt, 220 W. 57th St., New York City.

American Society of Engineering Contractors—Secretary, J. R. Wemlinger, 11 Broadway, New York City. Meetings: Second Thursday every month.

American Society of Heating and Ventilating Engineers—Secretary, J. J. Blackmore, 29 W. 39th St., New York City.

American Society of Mechanical Engineers—Secretary, Calvin W. Rice, 29 W. 39th St., New York City.

American Society of Naval Engineers—Secretary-Treasurer, Lieut. A. T. Church, U. S. N., Navy Department, Washington, D. C.

American Water Works Association—Secretary, J. M. Diven, 47 State St., Troy, N. Y.

Association of Civil Engineers, Cornell University—President, A. F. Williams, Ithaca, N. Y.; Secretary, A. S. Patrick, Ithaca, N. Y.

Association of Engineering Societies—Chairman Board of Managers, John W. Woermann, 423 Custom House, St. Louis, Mo.; Secretary, Joseph W. Peters, 3817 Olive St., St. Louis, Mo.

Association of Railway Electrical Engineers—Secretary, J. A. Andreucetti, C. & N. W. Ry. Co., Chicago, Ill.

Boston Society of Civil Engineers—Secretary, S. Everett Tinkham, 715 Tremont Temple, Boston, Mass.

Canadian Society of Civil Engineers—Secretary, Clement H. McLeod, 176 Mansfield St., Montreal, Can.

Canadian Railway Club—Secretary, James Powell, Grand Trunk Ry., Montreal, Que.

Central Railway Club—Secretary, H. D. Vought, 95 Liberty St., New York.

Civil Engineers' Society of St. Paul—Secretary, Edw. J. Dugan, Room 7, Old State Capitol Bldg., St. Paul, Minn.

Cleveland Engineering Society—Secretary, David Gaehr, Chamber of Commerce Bldg., Cleveland, Ohio.

Connecticut Society of Civil Engineers—President, Geo. K. Crandall, New London, Conn.; Secretary-Treasurer, J. Frederick Jackson, Box 1304, New Haven, Conn.

Detroit Engineering Society—Secretary-Treasurer, Frederick H. Mason, 614 Moffat Bldg., Detroit, Mich.

Engineering Association of the South—Secretary-Treasurer, J. C. Evans, Nashville, Tenn., Carnegie Bldg.

Engineers' Club of Cincinnati—Secretary, E. A. Gast, P. O. Box 333, Cincinnati, Ohio.

Engineers' Club of Minneapolis—President, L. S. Gillette, 74 Chamber of Commerce, Minneapolis, Minn.; Secretary, Louis Clousing, 2411 Oakland Ave., Minneapolis.

Engineers' Club of Philadelphia—Secretary, H. L. McMillan, 1317 Spruce St., Philadelphia, Pa.

Engineers' Club of St. Louis—Secretary, W. W. Horner, 5203 Maple Ave., St. Louis, Mo.

Engineering Societies of Purdue University, Lafayette, Ind.—Secretary, C. B. Penrod, 123 State St., W. Lafayette, Ind.

Engineering Society of Buffalo—President, David Bell; Secretary, John Younger, 27 Horton Pl., Buffalo, N. Y.

Engineers' Society of Pennsylvania—Secretary, E. R. Dasher, 31 So. Front St., Harrisburg, Pa.

Engineers' Society of Northeastern Pennsylvania—Secretary, A. D. Blackinton, Scranton, Pa.

Engineers' Society of Western Pennsylvania—Secretary, Elmer K. Hiles, 2511 Oliver Bldg., Pittsburgh, Pa.

Illinois Society of Engineers and Surveyors—Secretary, E. E. R. Tratman, Wheaton, Ill.

Indiana Engineering Society—Secretary, Chas. Brossmann, Indianapolis, Ind.

International Railway Congress Association—President (of the International Commission), W. Toudeller, 11 Rue de Louvain, Brussels, Belgium; Secretary General, L. Weissenbruch, same address.

Iowa Engineering Society—Secretary-Treasurer, Prof. J. H. Dunlap, Iowa City, Iowa.

Lake Superior Mining Institute—Secretary, A. J. Yungbluth, Ishpeming, Mich.

Louisiana Engineering Society—President, W. H. Williams; Secretary, W. T. Hogs, State Museum Bldg., New Orleans, La.

Michigan Engineering Society—President, Delmar E. Teed, Cadillac, Mich.; Secretary, Samuel J. Hoexter, Ann Arbor, Mich.

Montana Society of Engineers—President, Reno H. Sales, Butte, Mont.; Secretary, Clinton H. Moore, Butte, Mont.

Ohio Engineering Society—President, C. E. Sherman, Columbus, O.; Secretary, D. W. Seitz, Columbus, O.

Ohio Society of Mechanical, Electrical and Steam Engineers—Secretary-Treasurer, Frank E. Sanborn, Ohio State University, Columbus, O.

Rochester Engineering Society of Rochester—Secretary-Treasurer, Wm. F. Deven-dorf, 350 East Ave., Rochester, N. Y.

Toledo Society of Engineers—President, L. M. Gram, 1047 Spitzer Bldg., Toledo, O.; Secretary, L. T. Owen, 1047 Spitzer Bldg., Toledo, O. Regular meeting second Friday in each month.

Utah Society of Engineers—Secretary Frank W. Moore, 111 Newhouse Bldg., Salt Lake City, Utah. Third Friday of each month except July and August.

Vermont Society of Engineers—Secretary, Geo. A. Reed, Barre, Vt.

Western Society of Engineers—President, E. H. Lee, Dearborn Sta., Chicago; Secretary, J. H. Warder, 1735 Monadnock Blk., Chicago.

MECHANICAL AND TRADE SOCIETIES.

Air Brake Association—Secretary, F. M. Nellis, 53 State St., Boston, Mass.

American Boiler Manufacturers' Association—President, W. C. Connelly, E. Cleveland, Ohio; Secretary, J. D. Farasey, 37th St. and Erie Ry., Cleveland, O.

American Electric Railway Association—Secretary-Treasurer, E. B. Burritt, 29 W. 39th St., New York City.

American Electric Railway Manufacturers' Association—Secretary-Treasurer, H. G. McConaughy, 165 Broadway, New York City.

American Foundrymen's Association—Secretary, A. O. Backert, 12th and Chestnut Sts., Cleveland, Ohio.

American Institute of Metals—Secretary-Treasurer, W. M. Corse, 106 Morris Ave., Buffalo, N. Y.

American Railway Association—General Secretary, W. F. Allen, 75 Church St., New York City.

American Railway Bridge and Building Association—President, A. F. Killam, I. C. R. R., Moncton, N. B.; Secretary, C. M. Lichty, C. & N. W. Ry., Chicago.

American Railway Master Mechanics' Association—President, F. F. Gaines, S. M. P. Central of Ga. Ry., Savannah, Ga.; Secretary, J. W. Taylor, Karpen Bldg., Chicago.

American Railway Tool Foremen's Association—Secretary-Treasurer, A. R. Davis, 750 Pine St., Macon, Ga.

Association of Maintenance Way Master Painters (United States and Canada)—President, J. S. Rice, L. S. & M. S. R. R., Elkhart, Ind.; Secretary, Harry J. Barkley, I. C. R. R., Carbondale, Ill.

Boiler Makers' Supply Men's Association—Secretary, Geo. Slate, The Boiler Maker, 17 Battery Pl., New York City.

Canadian Association of Stationary Engineers—Secretary, W. A. Crockett, Mount Hamilton, Ont., Can.

Canadian Roadmasters' Association—Secretary, J. M. Mackenzie, West Toronto, Can.

Car Foremen's Association of Chicago—President, Chas. J. Wymer, Belt Ry. of Chicago; Secretary, Aaron Kilne, 841 N. 50th Ct., Chicago.

General Superintendents' Association of Chicago—Secretary, A. M. Hunter, 321 Grand Central Station, Chicago.

International Railroad Master Blacksmiths' Association—Secretary, A. L. Woodworth, C. H. & D. Ry., Lima, O.

International Railway Fuel Association—C. G. Hall, Secretary, 922 McCormick Bldg., Chicago.

International Railway General Foremen's Association—Secretary-Treasurer, Wm. Hall,

C. & N. W. Ry., 1126 W. Broadway, Winona, Minn.

International Union of Steam Engineers—President, Matt Comerford; Secretary-Treasurer, James G. Hannahan, 6634 Yale Ave., Chicago.

Master Boiler Makers' Association—President, James T. Johnston, G. B. I., C. P. R. R., 1387 W. 30th St., Los Angeles, Cal.; Secretary, Harry D. Vought, 95 Liberty St., New York City.

Master Car Builders' Association—President, D. F. Crawford, G. S. M. P., Penna. Lines, Pittsburgh, Pa.; Secretary, J. W. Taylor, Karpen Bldg., Chicago, Ill.

Master Car and Locomotive Painters' Association—Secretary, A. P. Dane, B. & M. R. R., Reading, Mass.

Maintenance of Way Master Painters' Association—Secretary, T. I. Goodwin, C. R. I. & P., Eldon, Mo.

National Association of Stationary Engineers—Secretary, Fred W. Raven, 417 S. Dearborn St., Chicago, Ill.

National Founders' Association—Secretary, J. M. Taylor, Room 342, 29 S. La Salle St., Chicago, Ill.

National Railway Appliances Association—Secretary, Bruce V. Crandall, 14 E. Jackson Blvd., Chicago, Ill.

Railway Equipment Manufacturers' Traveling Engineers' Association—President, Wm. S. Flurry, Ohio Injector Co., Monadnock Blk., Chicago; Secretary, F. N. Bard, Barco Brass & Joint Co., 230 N. Jefferson St., Chicago, Ill.

Railway Signal Association—President, Thos. S. Stevens, A. T. & S. F. Ry., Topeka, Kans.; Secretary, C. C. Rosenberg, Bethlehem, Pa.

Railway Storekeepers' Association—President, G. G. Allen, G. S. K. C. M. & St. Paul R. R., Milwaukee, Wis.; Secretary, J. P. Murphy, Box C, Collinwood, O.

Railway Supply Manufacturers' Association—Secretary, J. D. Conway, 2136 Oliver Bldg., Pittsburgh, Pa.

Roadmasters' and Maintenance of Way Association—Secretary-Treasurer, L. C. Ryan, C. & N. W. Ry., Sterling, Ill.

Supply Men's Association of American Boiler Manufacturers' Association of United States and Canada—President, J. T. Corbett (J. T. Ryerson & Son), Chicago; Secretary, F. B. Slocum (Continental Iron Works), Brooklyn, N. Y.

Traveling Engineers' Association—Secretary, W. O. Thompson, N. Y. C. Car Shops, East Buffalo, N. Y.

"Batter Up."

She was a bright girl and her escort, who was also her intended, was determined to find how quickly she grasped the points of the game. She got on so well that he ventured a light witticism on the subject.

"Baseball reminds me of the household," he remarked, "there's the plate, the batter, the fowls, the flies, etc."

"And it reminds me of marriage," she retorted, "first the diamond, where they are engaged, then the struggles and the hits, then the men going out, and finally the difficulty they have in getting home."

And he sat and thought and thought.



"CLEVELAND" Bridge Reamers

These reamers are designed for rough, severe service in structural iron and steel work and boiler plates. They are particularly adapted for use in pneumatic and electric portable tools. Write for Circular U.

The CLEVELAND Twist Drill Co.
Chicago CLEVELAND New York

NECESSITIES

High Grade Rubber Goods

Fire Hose

Reels, Nozzles

Fire Hose Carts

Rubber Cement

P. & W. Rubber Preservative

Rubber Boots

Leather-Soled Rubber Boots

Leather Belting

Upholsterer's Leather

Leather and Silk Fringes

Vestibule Diaphragms

Gimp

Brass Nails

Leather Head Nails

Signal Flags

Bunting

Linoleum

Cab Cushions

Cab Curtains

Track Jacks

Economy Soap Stock

Nut Locks

GUILFORD S. WOOD

Great Northern Building

CHICAGO, ILLINOIS

BURKE ELECTRIC COMPANY

MAIN OFFICE AND WORKS

ERIE, PA.

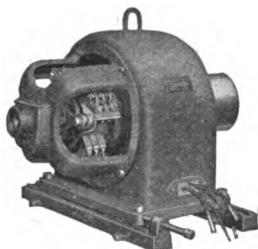
BULLETIN 109

JANUARY 1912

Revised Nov. 1911

DIRECT-CURRENT MOTORS AND GENERATORS

SEEN: 1-6 TO 100 H.P.



TYPE AN MOTOR WITH BELT AND PULLEY

Direct Current Motors

of robust characteristics are illustrated and described in this bulletin.

If you have not yet read about them, send for a free copy.

BURKE ELECTRIC COMPANY

ERIE,
PA.

BURKE ELECTRIC CO., Erie, Pa.
Please Send Bulletin 109C

Name

Address

When writing to advertisers please mention Ideal Power.

IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances
By THE IDEAL POWER PUBLISHING COMPANY
Fisher Building Chicago

Vol. 11.

February, 1915.

No. 4.

HOW MURPHY PUT IT OVER

A Play: In Four Acts

By C. I. HENRIKSON

Presented by

CHICAGO PNEUMATIC TOOL COMPANY
1010 Fisher Bldg. Chicago
Branches Everywhere
50 Church St. New York
Copyrighted

Cast of Characters.

Blake, the Boss—Superintendent of the Grand Central Boiler and Manufacturing Co. Somewhat old-fashioned and set in his ways, but a good fellow.

Murphy—An Ambitious Riveter. A pioneer in the use of air guns. Somewhat hot headed, but knows his business. A man with the courage of his convictions.

Finnegan—Also a Riveter. Not so courageous as Murphy. Very much under the thumb of Blake.

Dawson—A Representative of the Chicago Pneumatic Tool Company. Has unbounded confidence in his house and his line.

Riveters, helpers and heater boys.

Time.

Yesterday.

Place.

The riveting yard of a large boiler and manufacturing company in the middle west not far from Chicago.

ACT I.

Scene—Riveting yard of large boiler and manufacturing company. Several large, new boilers under construction at left. Sev-

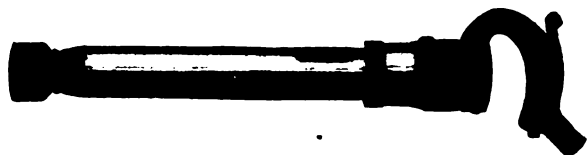
eral riveters, including Murphy and Finnegan, with their helpers busy with air guns. Ruby Steel Portable Storehouse at right. All workmen busy as bees as curtain rises. Five or six riveting hammers or "air guns" with incessant tattoo, making enough racket to wake the dead. Suddenly Murphy's hammer stops. He shakes it up and down and sidewise and then with a curse throws it to the ground and stamps around, continuing to swear a blue streak. The rest of the riveters stop working and grin. Murphy disconnects the hammer and walks to Center as Blake the Boss steps out of the Ruby House, locking the door after him.

Blake—What's the matter, Murphy?

Murphy—Oh, the blamed thing has balked again. The fourth time today and me on piece work with six kids and the old woman on me coat-tails. I tell you, Mr. Blake, if you'll excuse me for telling you again, them Exwyzee guns are no good. They're no good, I say.

Blake—Go easy, man, go easy. Remember your failing. I don't believe you hold that hammer right. Some dirt may have got into the valve.

And Now Comes The No. 11 Boyer Riveting Hammer



FOR DRIVING UP TO 1½ INCH RIVETS

This is in terms of steam tight work such as on retorts and digesters where the seams are subject to high pressures and on marine boiler work where uniformly high class workmanship is absolutely necessary.

This hammer is also well adapted for expanding super-heater flues,—and there are no doubt many special purposes to which a pneumatic hammer of this capacity can be used.



Rivet Set (Parker Style)

Owing to the extremely heavy blow of the No. 11 Boyer Hammer and the unusually severe punishment it inflicts on the rivet set, the Parker set is used. As will be seen from the cut, the Parker set has a wide tapering shoulder which enables it to better absorb and withstand the effects of the heavy blows of this hammer.

*WRITE FOR QUOTATIONS ON THIS NEW
POWERFUL TOOL.*

CHICAGO PNEUMATIC TOOL CO.

1014 Fisher Building, Chicago

50 Church Street, New York

Branches Everywhere

Murphy.—Yes, if it isn't one thing it's another with these Exwyzees. They may run all right for a month or two, but after that it's good night. You've got to treat them like babies and then they won't do anything for you. I want to tell you that the Boyer guns I used in Chicago never stopped like these do. And when they did we could get them fixed. Get them fixed. That's what I said. And I want to tell you I ain't the only one kicking on these guns.

Blake.—Take it back to the shop and get a new hammer for it.

(At this juncture another gun stops working. The riveter shakes it without avail. Then disconnects it and walks off at right with gun on his shoulder.)

Murphy.—Did you see that? He'll get it fixed and let it work a few minutes and then it will stop again.

Blake.—You don't appreciate the construction, Murphy,—

Murphy.—Construction be damned. Who cares for construction. You want boilers and I want guns that will drive rivets in 'em. That's what we want.

Blake.—Say, Finnegan, come here. You like those guns, don't you?

Finnegan.—Yes.

Blake.—How long have you used these Exwyzee guns?

Finnegan.—About six months.

Blake.—They're good guns, aren't they?

Finnegan.—Yes.

Blake.—Did you ever use the Boyer?

Finnegan.—No.

Murphy.—Yes, and it's no secret that Finnegan's wife has to rub his back with arnica every night. So his wife told mine confidentially. It takes a strong man like me to stand the fearful vibration of them Exwyzees.

Blake.—Just keep your shirt on, Murphy, don't get excited. You know what happens to a rivet snap when you don't cool it off once in a while.

Murphy.—I always get hot under the collar over these Exwyzee guns. A man like Finnegan that doesn't know any better isn't a judge. The Boyer hammer puts the rivets down faster, stays on the job and don't jar you all to pieces. But I suppose we'll have to use what we get. I'll have to bring this

one back to the shop and get another for it.

Exit Murphy at right with gun on his shoulder.

Enter Dawson at left with sample case.

Dawson.—Hello, Blake. Glad to see you. How is business?

Blake.—So, so.

Dawson.—When are you going to put in some real riveting guns?

Blake.—Just as soon as I can't get any more Exwyzees. I've been telling you that for a year. We're satisfied and we don't want to monkey around—trying all sorts of things—when we've got just what we want. I'll admit the Boyer Hammer is a good hammer, but I think the Exwyzee is just a little better.

Dawson.—Yes, and for over a year like a good fellow I've given you a chance to be shown. Let me demonstrate this Boyer now. I won't leave it with you unless you want me to.

Blake.—Well, go to it. Here, Finnegan, come here and run this Boyer gun so I can get rid of this guy.

(Enter Murphy with new Exwyzee on shoulder. He sizes up the situation, then cautiously lays hammer down.)

Murphy.—Mr. Blake, I'll give one day's pay to run that hammer to show you what I can do with it.

Dawson.—Back to the woods. Let Finnegan do it.

(Finnegan with the Boyer and another riveter with the Exwyzee are put to work, one against the other on two boilers. Dawson and Blake look on with watches in their hands. The Boyer hammer wins out.)

Murphy.—Hurrah for the Boyer!

Blake.—Shut up.

All the riveters form a group around Finnegan and examine the Boyer carefully.

Blake.—I suppose that's a special performer that you carry around just to make trouble.

Dawson.—Not on your life. I sold my sample yesterday. One of my customers took it away from me. Said he couldn't wait a day on the factory. I telegraphed for this one and it came in to the hotel from the factory this morning.

Blake.—Well, nothing doing today.

ACT II.

(Three days later.)

Scene same as act I. Same riveters busy with Exwyzee guns. Same noise and racket. Same guns stopping occasionally. Same swearing. Suddenly Murphy stops his work and begins laughing.

Murphy.—Ha! Ha! Ha! Boys, I've got an idea.

Chorus of Riveters.—We don't believe it. You'll have to show us. You must have gotten it out of IDEAL POWER.

Murphy.—Be that as it may, when I show you, you'll all turn round and eat out of my hand. I've got the greatest scheme that ever came over the pike. I'm going to get a Boyer hammer of my own. I'm going to buy one.

Chorus of Riveters.—Where are you going to get the money?

Murphy.—I'm going to make the boss a proposition to take it out of my pay

Finnegan (cautiously).—Put me next to the scheme, Murphy. I can't tell the boss, but these Exwyzees are getting my goat.

Murphy.—They got mine long ago. But I'm going to have a Boyer if it takes a leg.

(Enter Blake. At which all riveters get busy and go ahead with their work.)

Murphy.—Mr. Blake, I want to talk with you a minute.

(Both walk to center.)

I want to make you a proposition. If I buy a Boyer gun can I run it here?

Blake.—Sure, Mike.

Murphy.—Well, look here. That ain't all. If you get the hammer in here on trial and eventually pay for it, how long time will the firm have to pay for it?

Blake.—Ten days' trial and thirty days more to pay the bill.

Murphy.—Well, suppose I start now to pay you \$2.50 a week for the hammer by letting you take it out of my pay. Will you finance me to that extent? That is my proposition.

Blake.—Well, I don't—

Murphy.—I'll let you take \$5.00 a week out of my pay.

Blake.—I—well—you see—

(At this juncture an Exwyzee hammer stops working.)

Murphy.—My Boyer won't do that—when I get it.

Blake.—I don't like to mix the hammers.

Murphy.—Mix nothing. Boyers can't mix. They're alone in a class by themselves.

Blake.—Come into the office after a bit. I want to talk with you.

ACT III.

(Two days later.)

Scene same as before. Murphy and Finnegan examining a Boyer hammer which Murphy proudly wields.

Murphy.—Well, I got it.

Finnegan.—Congratulations, Murphy. You'll be president some day. And that isn't all. I want to tell you what we boys have done on the Q-T. We've collected a little purse for you and the first four payments on your Boyer won't cost you a cent. Here (handing him a ten spot).

Chorus of Riveters.—Speech! Speech!

Murphy.—Boys, I'm not a speechmaker. All I know is that the Boyer is the best riveting gun made and no one can bluff me out of it. I'm for the Boyer every time. If I didn't think that this little show of your confidence in me would mean more money for you in time, I couldn't take it. As it is, I'll borrow it from you. And you all now watch my smoke. I thank you, boys.

ACT IV.

(Six months later.)

Same scene. Same riveters but all using Boyer Hammers. Everybody happy.

(Enter Blake from right.)

Blake.—Murphy, come over here. I've got a surprise for you.

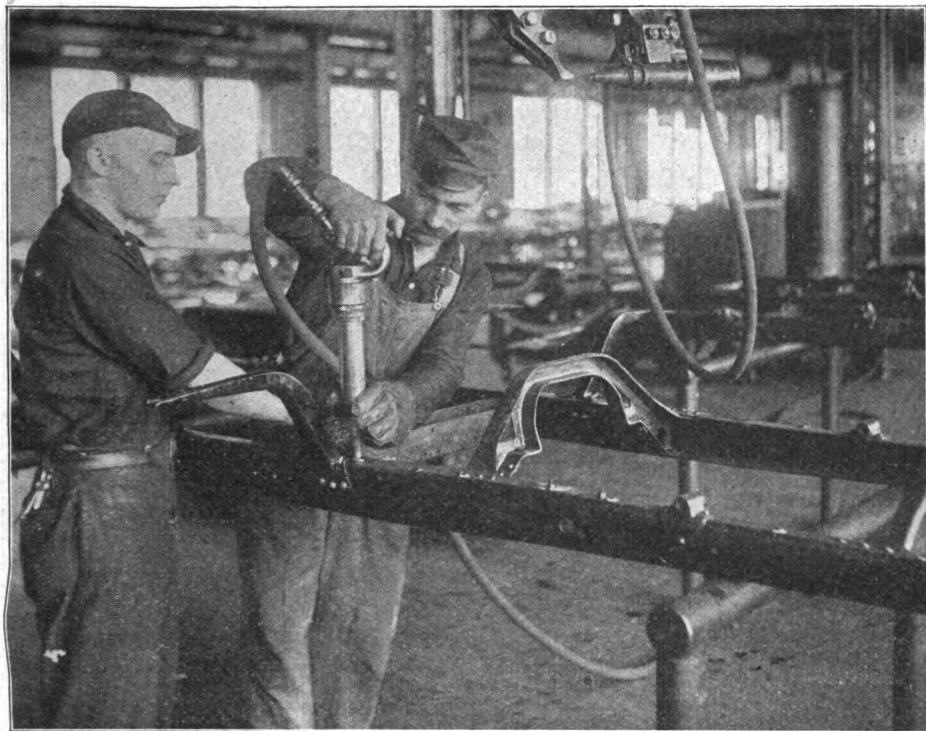
Murphy.—You can't surprise me. Ever since you let me get that Boyer, I can't be surprised any more.

Blake.—Quit your kidding, old man. Here is a surprise for you. You have paid for the Boyer out of your own wages but the firm won't stand for it and here is your money back.

Murphy.—Some mistake, I'm sure. That hammer didn't cost me anything.

Blake.—Yes, it did. We took \$2.50 a week out of your pay.

Murphy.—Yes, but I earned \$3 a week more with the Boyer.



Boyer Hammer driving rivets in chassis of Studebaker car at the Detroit factory of the Studebaker Company. Boyer Yoke Riveter with special yoke is shown suspended from special tackle overhead.

Blake.—Well, anyway here's your money back.

Murphy.—Come on, boys. This is your money. You backed me up in this and helped me out.

Blake.—You fellows in this deal too?

Finnegan.—Every one of us.

(Enter Dawson.)

Dawson.—Hello, Blake. How is business?

Blake.—Fine.

Dawson.—How are the Boyer guns working?

Blake.—Fine.

Dawson.—How are you?

Blake.—Fine.

Dawson.—And how are all the boys?

Chorus.—Fine.

Dawson.—I want to thank you, Blake, for that last order of six.

Blake.—I was glad to give it to you. We're turning out more work now than

ever before and I'm getting the credit for it. I owe it to you and the Boyer and to these boys here.

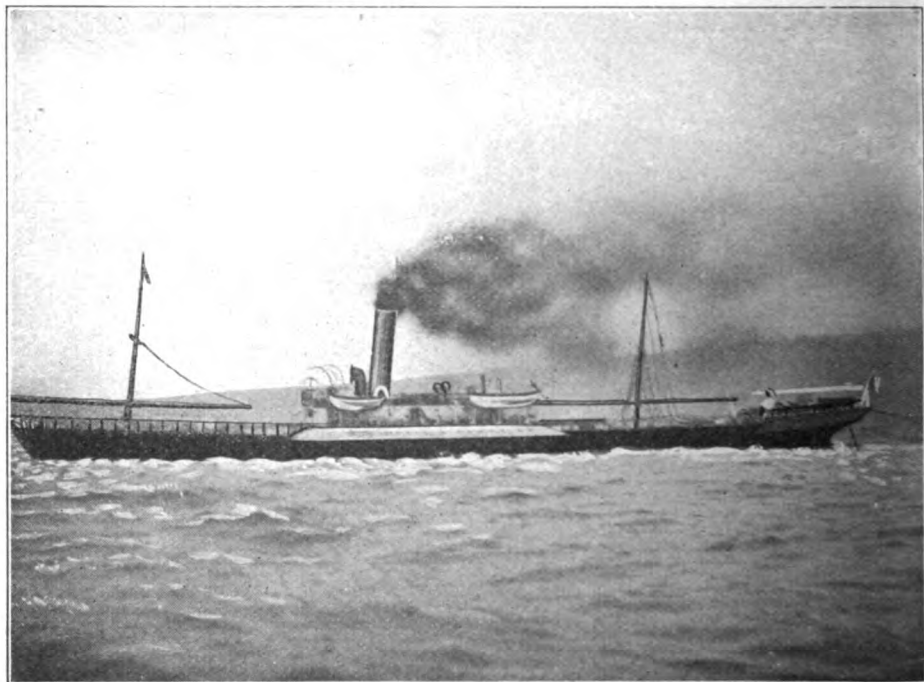
Chorus.—We're all satisfied. We should worry. (Murphy places a Boyer hammer on ground at Center. Dawson, Blake, Murphy, Finnegan and the others join hands and circle round it, as curtain falls.)

Moral: Stick to the Boyer.

Remembered.

Archdeacon Fisher was not without a little vanity in respect to his sermons, and once received a quiet hint from Constable on the subject. Having preached an old sermon once, which he was not aware that Constable had heard before, he asked him how he liked it.

"Very much, indeed, Fisher," replied Constable. "I always did like that sermon."



The SS. Mina Brea.

Raising Sunken Vessels With Compressed Air.

The idea of raising a sunken vessel by displacing the water from the interior with compressed air has been demonstrated successfully many times, the great danger being the possibility of the vessel coming to the surface and turning over as has happened, where intelligent engineering skill was not employed in the raising operation. Messrs. Orchard Bros. of Antofagasta, Chile, recently undertook a job of this kind and write as follows concerning a 'Chicago Pneumatic' Class G-SS 9x9x11 compressor used in the work:

"This we only purchased some time ago, and we had an opportunity to make use of it lately, as we undertook a contract for salvage of the petroleum steamer 'Mina Brea,' which vessel struck a rock some thirty miles from Antofagasta, and had her bottom plates completely damaged. The steamer was considered a total loss, when the idea occurred to us to apply compressed air at

sixteen compartments. In forty-eight working hours the steamer was absolutely saved. The cargo of petroleum, some 5,000 tons, was practically all saved. We enclose some photographs showing your compressor working on deck on board the steamer, which has now been taken south to the Chilean dockyard for final repairs. We shall later on send a new order for another steam-driven compressor to replace the one which was sold to and taken by the 'Mina Brea'."

An Expert.

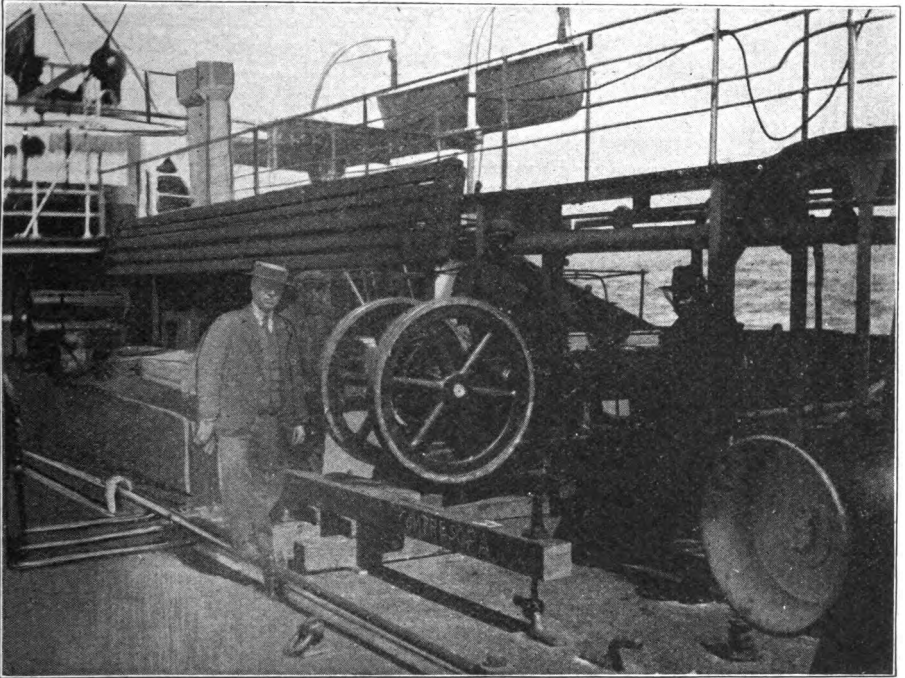
"You say this man is no chicken stealer?" inquired the judge.

"Yassuh," replied Mr. Erastus Pinkley. "Dat's what I said."

"What do you know about the facts in this case?"

"I isn't 'sposed to know nuffin 'bout de facks in de case. I is an expert witness foh de defense."

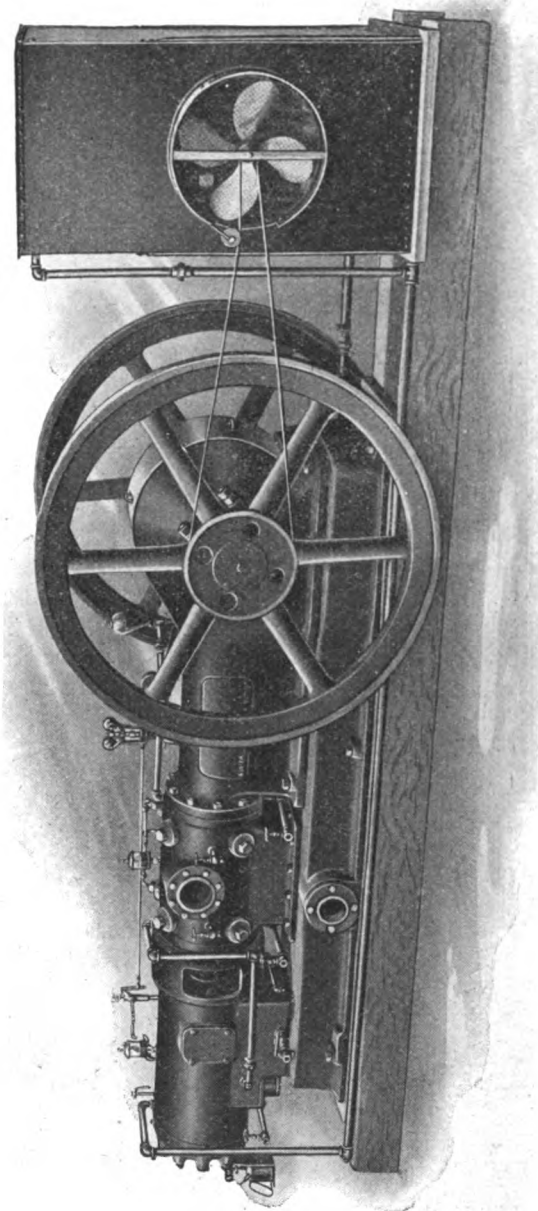
Easy money is easy to get rid of.



Showing "Chicago Pneumatic" Class GSS 9x9x11 Steam Driven Compressor on deck of Mina Brea.



Showing position of Mina Brea when Orchard Bros. took the contract for salvage. Tug boats on either side pumping water out of her to keep her afloat.



"Chicago Pneumatic" Type N-SO Fuel Oil Driven Compressor Mounted on Skids for Semi-Portable Use.



COLLECT
A62G5 PR 71/NL \$1 & 35 VIA KINGMAN COUNT -

FRISCO ARIZONA NOVEMBER 12 1914

CHICAGO PNEUMATIC TOOL CO

NEWYORK

N-S O FUEL OIL COMPRESSOR HAS BEEN WORKING
STEADILY TWO MONTHS TWENTY FOUR HOURS PER DAY AND HAS
GIVEN ENTIRE SATISFACTION STOPPING ONLY TO FILL GREASE CUP ON
ECCENTRIC AND CLEAN OUT GAS CYLINDER ONCE EVERY FOUR WEEKS
USING STANDARD OIL CALIFORNIA SPECIAL GAS OIL FORTY TO FORTY
THREE DEGREES BAUME AND IS BROWN IN COLOR DUE TO THE
ASPHALTUM BASE CONSUMPTION THIRTY GALLONS PER NINE HOUR DAY.

A B CALHOUN

What an N-SO Compressor Is Doing.

On Oct. 2d, prior to the receipt of the above-mentioned telegram, Mr. Allan B. Calhoun, superintendent of Arabian Consolidated Mines, wrote to Don A. Carpenter & Co., El Paso, Texas, Southwestern agents for the Chicago Pneumatic Tool Company, as follows:

"In answer to your letter of September 11th, I have the pleasure in stating that we are getting very satisfactory results from our new N-SO 'Chicago Pneumatic' low degree fuel oil driven compressor.

"It has been in operation one month and I find it comes up to all representations in regard to both fuel economy and general results.

"I consider this compressed air unit most suitably adapted for a prospect or a mine in the early development stages."

For further information regarding the N-SO type of "Chicago Pneumatic" compressors readers are invited to consult Bulletin 34-K, consisting of twenty-four pages of interesting cuts and details. A special feature of this bulletin

is a compilation of figures giving in detail the comparative cost of operating air compressors by fuel oil, electricity, and steam. You can get it by addressing our nearest branch office. It won't hurt to say you saw it in Ideal Power.

Where Soap Was Needed.

While the agent was selling farm machinery at the house, the friend at the gate held his horse, and a conversation took place with the small boy of the family.

With grave incredulity he was saying: "Are you sure you are only nine years old? I think there must be some mistake."

The boy was positive, but to make sure, "Ma," he called, "ain't I just nine years old?"

"Yes, son."

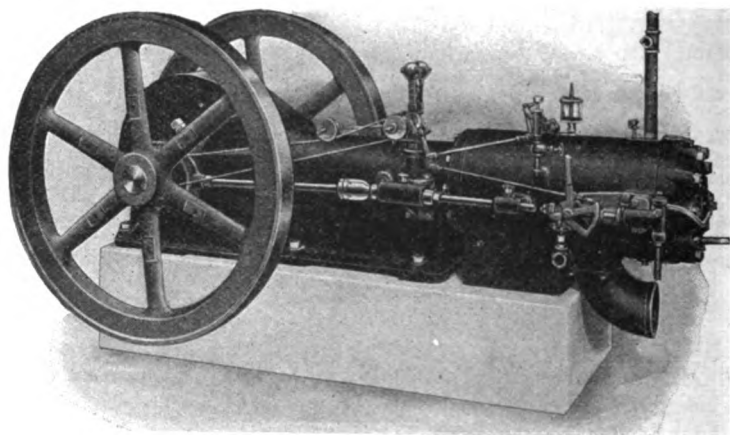
After a time he ventured: "Say mister, what made you think I was more than nine years old?"

"Why," said the stranger, "I couldn't understand how you could get so dirty in nine years."

"Giant" Fuel Oil Engine

For Pumping, Electric Lighting and all Power Purposes

10 H. P. for 3 Cents Per Hour
Cheaper than Electricity
Better than Steam



"GIANT" FUEL OIL ENGINE

Will Run on	Crude Oil, Fuel Oil, Engine Distillate, Residuum, Kerosene, Alcohol, Naphtha, Solar Oil, Gasoline.
Has No	Valves, Carburetor, Magneto, or other Electric Firing Devices.
Has	Valveless Two Cycle Power Cylinder, Governed Fuel Injection, Hot Plate Ignition, Self-Oiling Lubrication, Crosshead Construction, Perfect Scavenging, Rugged Enclosed Frame, Balanced Cranks.

Eight Sizes—12 to 100 Horse Power

Prices and information on request and ask for Bulletin 34-W.

Chicago Pneumatic Tool Company

**1014 Fisher Bldg.
Chicago**

**Agencies and Branches
Everywhere.**

**50 Church Street
New York**

Duntley Electric Hammer Drill

Universal Type

Patented February 18, 1913. Others pending.



This tool is equipped with a universal motor, (patents covering which as applied to portable tools are controlled by this company), and will operate interchangeably on direct or alternating current. It is designed for drilling in stone or concrete where a hammer blow is necessary to do effective work. The blow delivered on the drill steel is produced by pneumatic impact and is very effective. The tool is well balanced and all parts readily accessible. A thumb switch conveniently located in the handle for the control of the electric current is manipulated just as in the well known pneumatic hammers. All bearings throughout are of the latest ball type, provision being made for the easy lubrication of all revolving and reciprocating parts. In drilling down holes in stone or concrete the powdered cuttings collect rapidly and not only absorb and waste much of the force of the blow, but tend to choke up the hole making it difficult to remove the bit. A special feature of the Duntley Electric Hammer Drill is the live air device for cleaning the hole of cuttings while drilling. This makes it possible to deliver the full force of the blow on the solid stone or concrete, and as there is no choking up there is no difficulty in removing the bit. Hollow steels for this purpose are furnished in diameters of from $\frac{1}{4}$ inch to 1 inch, and from 5 inches to 10 inches long. (Longer on special order). For holes smaller than $\frac{1}{4}$ inch solid star point steels can be furnished.

ily accessible. A thumb switch conveniently located in the handle for the control of the electric current is manipulated just as in the well known pneumatic hammers. All bearings throughout are of the latest ball type, provision being made for the easy lubrication of all revolving and reciprocating parts. In drilling down holes in stone or concrete the powdered cuttings collect rapidly and not only absorb and waste much of the force of the blow, but tend to choke up the hole making it difficult to remove the bit. A special feature of the Duntley Electric Hammer Drill is the live air device for cleaning the hole of cuttings while drilling. This makes it possible to deliver the full force of the blow on the solid stone or concrete, and as there is no choking up there is no difficulty in removing the bit. Hollow steels for this purpose are furnished in diameters of from $\frac{1}{4}$ inch to 1 inch, and from 5 inches to 10 inches long. (Longer on special order). For holes smaller than $\frac{1}{4}$ inch solid star point steels can be furnished.

General Data, Size No. 0

Wound for 110 or 220 volts (Universal Type to operate on either D. C. or single phase A. C.)

Maximum capacity, in stone or concrete.....	1 inch
Weight.....	21 $\frac{1}{4}$ lbs. net
Overall length.....	17 $\frac{1}{2}$ inches

Equipment:

- 10 ft. electrical conductor with Edison plug.
- 2 drill steels (specify diameter and length when ordering.)

CODE WORDS:

110 Volts
Monavirly

220 Volts
Monaviror

Write for Prices

CHICAGO PNEUMATIC TOOL CO.

1014 Fisher Building
CHICAGO

Branches Everywhere

50 Church Street
NEW YORK

IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air
and Electrical Appliances

BY THE

IDEAL POWER PUBLISHING CO.

1014 Fisher Building

CHICAGO, U. S. A.

C. I. HENRIKSON

Editor

Vol. 11. FEBRUARY, 1915. No. 4.

TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year
Other Countries in Postal Union, 50 cents per year

ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our
subscription list.

Now Is the Time to Have Your Pneumatic Equipment Put in Good Working Order.

Twelve years ago a Class "F" "Little Giant" drill was shipped from our factory and was recently returned to us for repairs for the first time.

The following report of a test of its performance is interesting, for it shows how wasteful these machines become when not kept in proper repair, although they may be apparently in operative condition. This particular machine had been used right up to the time of its return for repairs and to all appearances was in good shape.

In the test on a $\frac{7}{8}$ inch hole, $\frac{7}{8}$ inch deep per minute was drilled, requiring 7 feet of compressed air. Compare this with the performance of a new machine, which drilled $2\frac{3}{4}$ inches per minute on $4\frac{1}{2}$ feet of compressed air.

The old machine required, therefore, four times as much air to operate it and it required three times the time to do it in as compared with a new machine. If it cost \$2 per day in wages to operate a new drill, \$6 would be spent for the same purpose in operating the old one, evidently a waste of \$4.

If time were an object it would take until the day after tomorrow to finish what might have been finished today.

Estimating the cost of compressed air for operating a new machine at 54 cents per 10 hours, when a steam-driven compressor is used, we have a cost of air of \$2.16 for the old machine, or a waste

of \$1.62. This, plus the \$4 waste of wages, makes a total waste of \$5.62 per day.

This old machine was one of 50 in use in a large industrial plant, and estimating that each machine operates 25 per cent of the time, the net waste would be \$70 per day, which would purchase a new machine every twenty-four hours.

The saving on air per year per machine, figuring 25 per cent of time in use, would amount to about \$125. With only slight attention, such as careful oiling and seeing that parts are kept tight, an average of one-half hour per day would amount to about \$40 per year.

With the estimated saving per year of \$125 and the cost of proper care per year, estimated at \$40, there would still be a net saving of \$85, or more than enough to purchase a new machine at the end of the year. It would therefore be more economical to throw the machine into the scrap heap and buy a new one than to continue using the old worn one under the conditions above stated.

These figures are conservative and may represent a condition that exists in your plant, shop or factory now.

For your guidance in returning tools for repairs, please note the following general shipping directions, which are safe to follow:

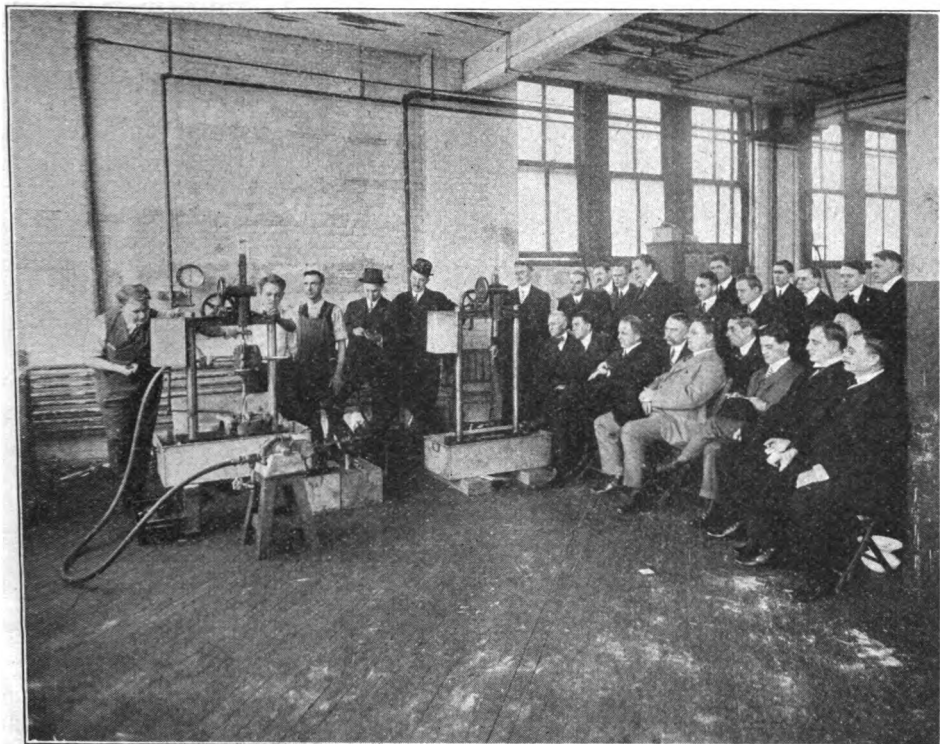
Send Boyer hammers, drills, riveters and sand rammers, also Keller hammers, riveters, drills, plug drills, sand rammers and Hummer drills to the Chicago Pneumatic Tool Company, Detroit, Mich.

Electric drills requiring minor repairs only should be sent to the nearest of our stations at Chicago, Detroit, New York, Boston, or the Chicago Pneumatic Tool Company, Erie, Pa.

If the repairs are extensive, send the tools to us at Detroit, Mich., or to the Chicago Pneumatic Tool Company, Erie, Pa.

"Little Giant" drills to the Chicago Pneumatic Tool Company, 1241 E. 49th street, Cleveland, Ohio.

Compression riveters and hoists to the Chicago Pneumatic Tool Company, Franklin, Pa.



Scene in testing department of Cleveland Plant, Chicago Pneumatic Tool Co. Showing a Little Giant Drill breaking some previous records for drilling in the presence of the salesmen's convention. It is in this department that all Little Giant Drills are put through a course of sprouts before they get the official O K from the inspector.

Annual Sales and Factory Convention.

The annual Chicago convention of the sales and factory forces of the Chicago Pneumatic Tool Company gave place this year to a trip through the company's plants at Detroit, Cleveland, Erie and Franklin, Pa., participated in by the branch managers and factory superintendents. President W. O. Duntley called the convention to order at Detroit plant on Thursday, January 18. Tuesday and Wednesday were spent at Cleveland, Thursday at Erie and Friday and Saturday at Franklin. The party arrived in Erie on Wednesday evening and were taken in charge by Mr. James Burke of the Burke Electric Company, who entertained them at a sumptuous dinner at the Lawrence Hotel. On Friday evening the visitors were guests at a banquet given in their honor by the Franklin Board of Trade. Elaborate ex-

hibits of the company's products were on display at the various plants and methods of manufacture and assembly, and the inspection and elaborate tests that are given the tools were thoroughly demonstrated to the visitors.

She Knew.

"My dear," called a wife to her husband who was in the next room, "what are you opening that can with?"

"Why," he said, "with a can opener. What did you suppose?"

"Well," replied his wife, "I thought from your remarks you were about to open it with prayer."

Mary had a little calf,
It made her feel quite hurt,
And that is why she never wore,
The latest style of skirt.

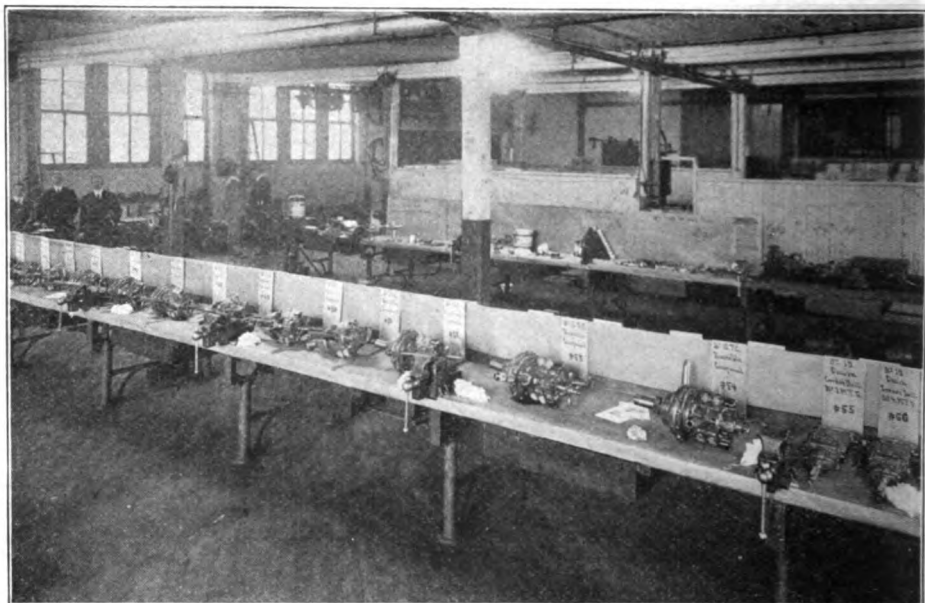


Exhibit of Little Giant Drills at the Cleveland Plant of the Chicago Pneumatic Tool Co. One drill of each size and type placarded with brief specifications was on display for the edification of the salesmen.

How to Get Good Air Tool Repair Men.

Good men in any line are generally hard to find, but it is especially true of air tool repair men. In the interests of those who are looking for services of this character, as well as of those looking for employment, we have established an employment department in the hope that we can bring the employer and employe together. Every shop where pneumatic tools are used extensively should have an experienced air tool man. If you need one let us know.

These Men Want Jobs.

First-class machinist, age 35, steady and sober, especially good on air tools. Can set valves and could take charge of all machinery. Address Ad-1, care Ideal Power.

Pneumatic Tool repair man with sixteen years' experience wants steady job where good work will be appreciated. Address Ad-2, care Ideal Power.

Air Tool man with railroad experience desires to make a change. Could take entire charge of pneumatic tool department. Address Ad-3, care Ideal Power.

A foreman boiler maker with long and creditable experience, with thorough knowledge of pneumatic tools and with best of references, wants position with some railroad. Address Ad-4, care Ideal Power.

A superintendent of steel construction, with twenty-two years' experience, wants to connect up with some reliable concern. Can furnish best of references. Address Ad-5, care Ideal Power.

Poor Smith.

Smith (meeting an acquaintance of the previous evening): "Ha, my boy, got home all right, then?"

Jones (gloomily): "Yes, but my wife wouldn't speak to me."

Smith (enviously): "Lucky fellow, mine did."

Beast of Burden.

Daughter—Shall I take an umbrella to post this letter, mother?

Mother—No, stay in the house; it isn't a fit night for a dog to be out; let your father post the letter.

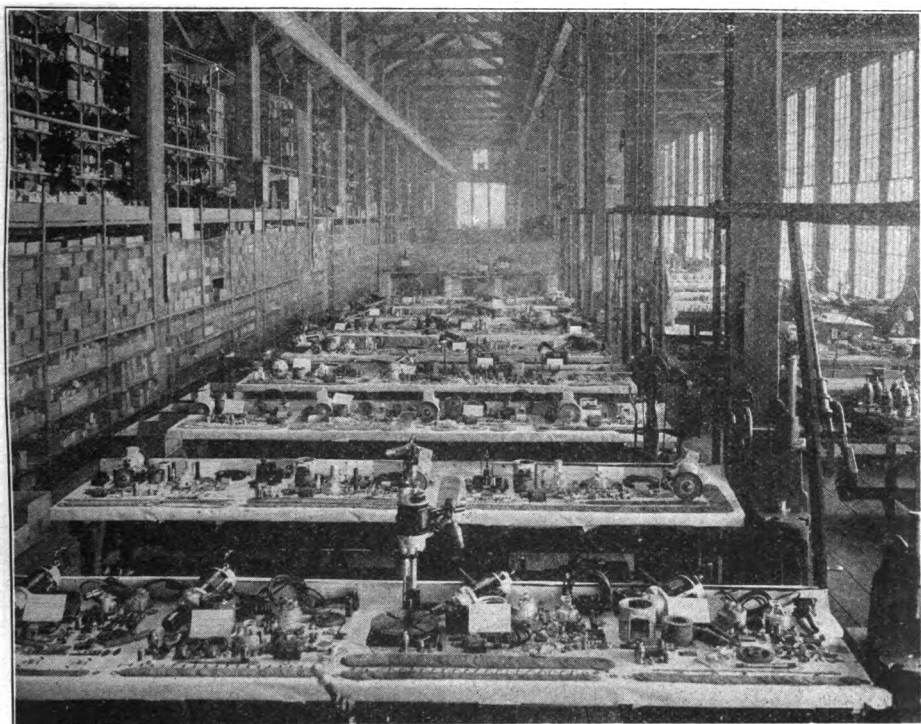


Exhibit of Duntley Electric Drills and Grinders at the Burke Electric Plant, Erie, Pa., prepared for the benefit of visiting salesmen of The Chicago Pneumatic Tool Co. One drill and grinder of each size and type was on display surrounded by all of its component parts, giving the salesmen an insight into the electric tool construction which they could get in no other way.

Capacity of the Horse.

Some interesting data relative to the working capacity of the horse is given in a comparison between the horse and the gas traction engine made in a paper read by Mr. L. W. Ellis at a recent annual meeting of the Gas and Gasoline Engine Association, and reprinted in the *Engineering News*. Mr. Ellis says:

Endurance is the horse's weakest point. Ten hours a day is often assumed as his working period. Authorities claim that eight hours is better, or that six under a heavier load will accomplish the same volume of work with less tear and wear on the horse. The average farm horse cannot be depended upon for more than 13 to 15 miles of pull a day, nor more than four to six hours of work per day, as an average of even the busiest months.

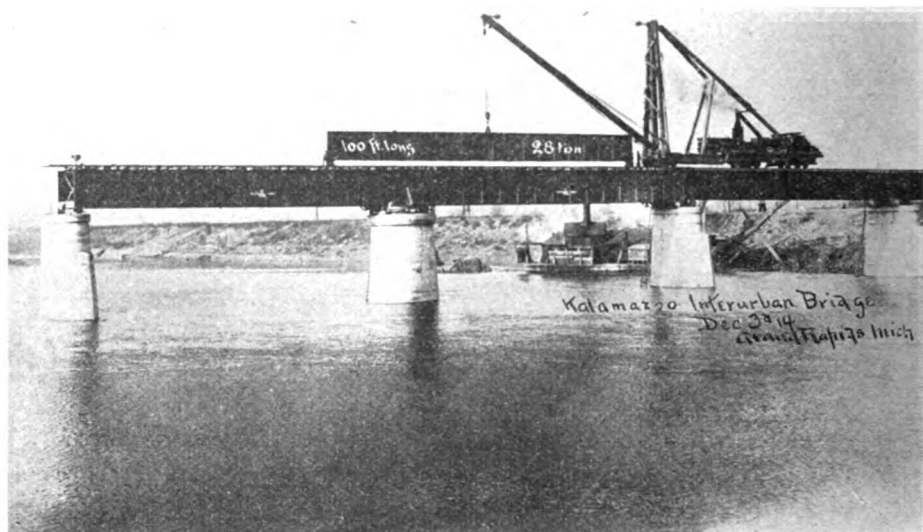
Properly handled, working about six hours a day, well and carefully fed, a

horse may have a working life of ten years of 1,000 hours each. The average farm horse will do well to develop 500 horsepower hours per year or 5,000 in ten years.

About 20 per cent of the horse's weight may be taken as the maximum sustained draft, and six to eight miles per hour his maximum sustained speed for anything more than an hour or so per day. The draft horse ordinarily gives the largest volume of work per day at about one-half his maximum load and one-third his maximum speed.

One reason for the great flexibility of the horse is the fact that he works most economically at about one pound of draft for ten pounds of weight, or from 50 to 20 per cent of the rate he can exert in a pinch.

Anyway, we admire a cheerful idiot more than we do the other kind.



Carrying Girder Out Into Place.

The Kelly-Atkinson Construction Co., 1304 Security Building, Chicago, have just completed the deck plate girder bridge over the Grand River for the Michigan Railway Engineering Co. for the use of the Kalamazoo Interurban. The bridge is 854 feet long, 12 feet wide and consists of deck plate girders of 85 and 100 foot spans each, with one span 197 foot long for the draw. The girders support a steel floor, 12 foot wide, on which the ties are placed. Work was begun Nov. 20th and the job completed on Dec. 19th. About 20,000 rivets were driven, Chicago Pneumatic Tools being used exclusively. Parker Snaps were used and only one was broken on the entire job. The derrick car used to carry out these girders was constructed from material from several different rigs. The mast is 46 feet high from top of rail and the boom is 75 feet long. An ordinary flat car was used with an extension built

on the back for counterweight. The estimated capacity of the derrick car used is 40 tons.

Photograph No. 1 shows a girder being carried into place and No. 2 shows the girder ready to be lowered.

The work was done under the supervision of Geo. E. Burtscher.

Located at Last.

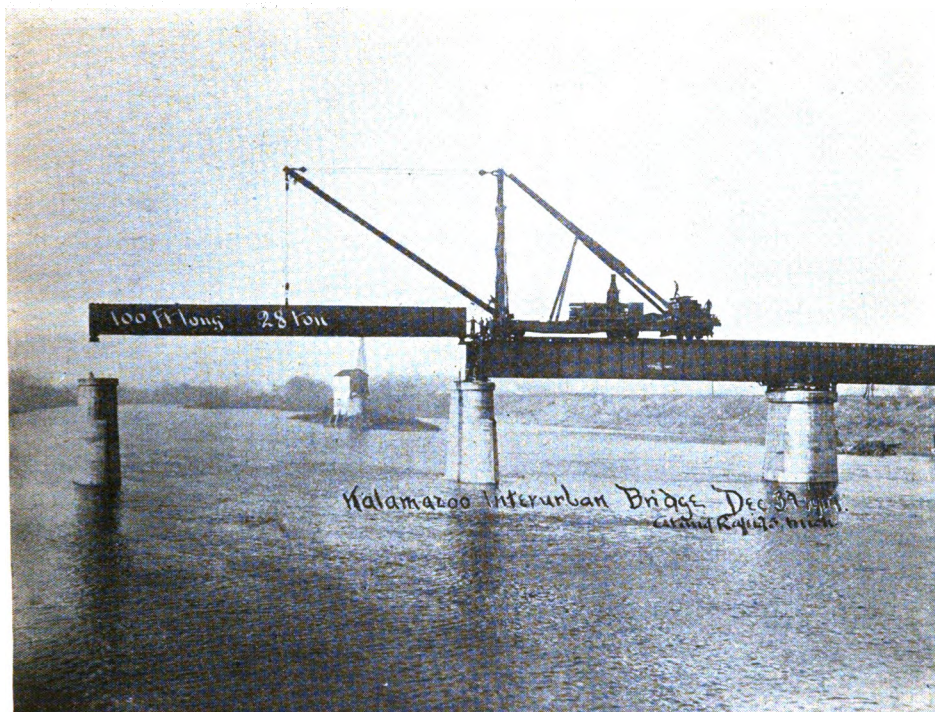
A traveling salesman returned in a very despondent mood after being on the road a month. His boss, noticing his dejection, said:

"Levi, vy do you look so bad?"

Levi replied, "I vish I could die and go to hell."

Boss—"Vy you make such an awful vish, Levi."

Levi—"Because every vere I go every merchant say, 'Business has gone to hell.'"



Girder Ready to Be Lowered.

As a Slight Token.

A widower belonging to a country village lately led to the altar a fourth bride. After the honeymoon the happy couple settled down in his home, and, as the surrounding country was new to the lady, she was anxious to visit all the places of interest in the locality.

Among the spots visited was the village churchyard, and there the husband and wife paused before a very elaborate tombstone, the property of the bridegroom. The bride, being a little short-sighted, asked him to read the inscription. In solemn tones he read:

‘Sacred to the memory of Sarah—, beloved wife of John —; also Jane —, beloved wife of John —; also Mary —, beloved wife of John —.’

He stopped abruptly.

"What are the words beneath?" innocently asked the lady, and her horror can be imagined when he read:

"Be ye also ready."

Energy or Radium.

If one could utilize the energy of a ton of radium through a space of thirty years it would be sufficient to drive a ship of 15,000 tons, with engines of 15,000 horsepower, at a rate of fifteen knots throughout the whole thirty years. To do this 1,500,000 tons of coal are actually required, says the Chicago Tribune.

These are not fanciful figures, for the energy is there, though, as a matter of fact, it is unlikely that man will ever produce much more than half an ounce of radium a year.

Still, the fact is important for this reason—that science is convinced that the radium in radium bromide is not the only element which possesses this marvelous store of energy, but that the calcium in gypsum and the sodium in common salt contain also this energy content.

One little taste of defeat is difficult to swallow.



Little Giant Truck Delivering Standard Oil in Polo, Ill.

Place Order for Ninth Little Giant.

The American Union Fish Company of Los Angeles, Cal., have recently placed order for their ninth Little Giant Truck. It was in 1911 that these people were persuaded to give up a part of their horse and wagon outfit, and invest in a Model "D" Little Giant. No concern using auto trucks has taken greater advantage of the advertising possibilities of motor driven vehicles than the American Union Fish Co. A panel top body, beautifully finished with a fine specimen of the finny tribe painted on each side, over which appeared the slogan, "If It Swims We Have It," not only delivered the goods to the sea food eaters of Los Angeles, and then performed the final act of the sale, but it actually created business by attracting attention, arousing interest and creating desire, three prime objects of advertising.

Their vice president, Mr. Coalures, in commenting on the service performed by

their fleet of Little Giants, says "In 1911 we were using nothing but horse-driven vehicles for delivering fish; during this year we purchased a Model "B" 1500 lb. capacity truck, and found that we could cover double the territory at the expense of one team and wagon. This truck proved to be an excellent advertisement for our business and in 1912 we purchased two Model "C" trucks to take care of the increased trade, and thereafter, as fast as we could dispose of the horses we have replaced them all with trucks.

My experience has taught me that not only are trucks economical, but they increase the business by being able to give prompt delivery and attention to the customers. I am positive that the "Little Giant" trucks have always been the best trucks in its class, and proof of my belief is evidenced by the fact that I hereby place my order for the ninth "Little Giant" truck. I will be glad to recommend your car to any prospective buyer."



Little Giant, five years' old, still doing business for J. H. Eitapence, Rutland, Vt.

Five Years Old and Still on the Job.

This is a photograph of a Little Giant motor truck owned by J. S. Eitapence, Rutland, Vt., loaded with a complete plumbing job weighing 1,800 lbs., ready to start up into a little mountain town about twenty miles from Rutland and over a rough and hilly road, the road in several places being 20 per cent grades.

This car was purchased by Mr. Eitapence on June 3d, 1910, and he has operated it continually, summer and winter, ever since. The only time it is laid up is about a week early each spring when it is cleaned up and painted. Last spring was the first time the engine of the truck was ever taken apart. The only parts of the engine that showed any signs of wear were the piston rings. These were worn so little that they were replaced in the engine and will give satisfactory service for another year. This is a very remarkable record for a motor truck engine.

Mr. Eitapence is able to maintain his Little Giant for two-thirds of what it formerly cost him to maintain a one-horse team and it requires considerably less work to take care of. This truck goes everywhere within a radius of fifty miles of Rutland and has never yet had a tow rope on it.

Mr. Eitapence recommends the Little Giant to anyone contemplating the purchase of a motor truck. He states that it has increased his business fully 20 per cent and is much more efficient in every way than team delivery.

"What's daughter doing?"

"Making shrimp salad."

"I didn't know we had any shrimp in the house."

"We haven't, but one is going to call on her this evening."

No great success was ever attained by kicking.



Standard open flare board body 44x114" with special pipe racks and buggy top.

A Little Giant Truck in the roofing and sheet metal business, Baltimore, Md., sold by the Little Giant Sales Co., Charles and Twentieth streets, E. H. Habersham, General Manager.

The Effect of Motor Trucks on the "Help."

By. C. I. H.

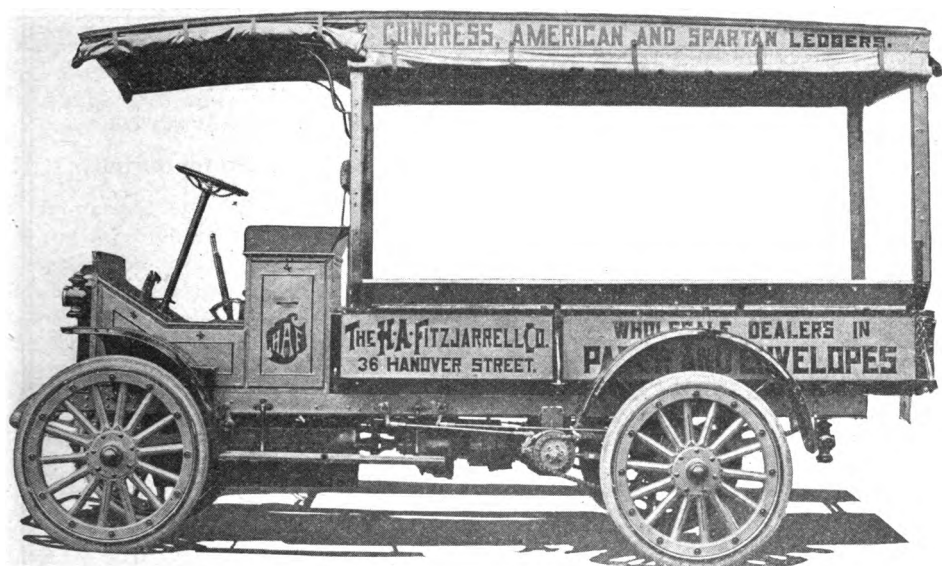
Most diseases are contagious, but so are the good things of life. Like begets like. The world likes to follow a leader. The inspiring music of life and drum breaking into a quickstep will waken a whole army of weary soldiers and spur them on into "double quick." When the pace-maker gets busy he holds the world by the nose. After holding the reins on the average delivery horse, the driver tunes his nerves, muscles and his mental attitude toward things in general to the speed of the "charger" before him. The horse is in no rush, why should the driver be. Why should the process of loading and unloading his wagon be hastened to a speed out of keeping with the slow, comfortable jog of his horse. Place that man in charge of a motor truck. Place in his hands a book such as the "Little Giant Chauffeur," issued by the Chicago Pneumatic Tool Company. Let him study the book and study his machine. You will be surprised at the transformation that will come over your driver. If he has any gumption at all he will speed up. To spin along behind twenty-horse power is different from

jogging along behind one-horse power. He not only learns to act faster and do things faster, but he will actually learn to think faster. It may have become a custom with you to say on his departure over his route, "Now, Jim, hurry up. You know you have to make another trip before six." Henceforth your parting word will be, "Jim, don't go too fast. Hold her down. Don't exceed the speed limit." And Jim, having been awakened from his lethargy—changing his pace-maker from horse to motor truck, will ginger up into a live factor in your business. And that is not all. When Jim ceases to be chambermaid to old Dobbin, and is relieved of his duties as chief hairdresser and chiropodist in your stable, he will awaken still more. Association with a motor truck will develop him and he will become an asset instead of a liability.

His Money's Worth.

Scotch Father: "And you must ha' seen a lot of sights in London, eh?"

Scotch Son: "Not so muckle. They charged me six shillings a day for my room at the hotel, and you dinna suppose I was going to pay that without staying in the room and getting my money's worth?"



Standard four post canvas top.

Another Little Giant Truck doing business in Baltimore, also sold by the Little Giant Sales Co. of that city.

Why the Service Garage Manager Uses Swear Words.

Another case, B recently employed a new driver for about \$6 per week. The second day we had to tow him in. He had no water in the radiator and no oil. The cylinder had been evidently red hot. The piston, piston pin and connecting rod had turned white from heat and the piston pin was frozen to the connecting rod and when the motor got cold the working parts could not be moved—they were frozen from the heat and, of course, the bearings burnt out. They blame it on the truck and told things to the service garage manager. The B Co. phoned the other day that their car was no good and would not pull up hills. We, of course, went out to see what was the trouble and found nothing more than that the low speed needed adjusting. Showed their driver the low speed adjustment screw on the transmission and asked if he knew what that was. He said he did not. Here is a man that had been driving a truck about a year, but did not know about the adjustment screw, and many other drivers that are driving auto trucks have never taken the

cover off their transmissions nor made a speed adjustment.

Sh! Don't Wake Him Up.

I wish I was a rock a-sittin' on a hill.
A-doin' nothin' all day long
But just a-sittin' still.
I wouldn't sleep,
I wouldn't eat,
I wouldn't even wash,
I'd just sit there a thousand years
And rest myself, By-Gosh!

On the Jump.

One of Lord Charles Beresford's tenants who conducted a small undertaker's establishment in Waterford, was one day asked how the business was getting along.

"Grand, me lord!" he exclaimed. "I now have the luckiest little hearse you ever saw. Glory be to goodness, it was never a day idle since I got it."

An Iowa woman who looked into the barn and saw her husband hanging to a crossbeam is reported to have exclaimed:

"Land sakes! So that's where my clothesline went to!"

Don't Pump Your Life Away

on a Hand Car or a Velocipede When You Can Ride in an Automobile.

The No. 2 Rockford Car is a light, speedy, serviceable runabout for the rails.

**SIMPLE in
construction**

**EASY to
operate**

**EASY to
pay for**



No. 2 Rockford Car

**Send for
Catalogue
No. 43**

Chicago Pneumatic Tool Co.

Chicago: 1014 Fisher Building

New York: 50 Church St.

Branches Everywhere.

At the convention of the Roadmasters and Maintenance of Way Association, held in Chicago, Sept. 9-12 last the following report on section motor cars was rendered by a committee which had been appointed to investigate.

1. The use of section motor cars is considered by your committee an important development toward increase in efficiency.

2. There have been diverging views existing among some railroad men concerning the advisability of installing motor cars on sections and, while their use may not be equally advantageous in all territories, it is evident to your committee, after careful investigation and actual experience in the use of these power driven cars, that there is absolutely no doubt of the economy and advantages in their use.

3. These cars, where used, have resulted in a substantial saving in track maintenance not only from the fact that a greater territory may be covered by the same number of men formerly em-

ployed on the hand car sections, but because experience shows that greater efficiency and longer hours of work are secured; the men reach their work in a condition ready for duty; the service of work trains has been dispensed with, to a great extent, in the distribution of material and taking gangs to and from distant points, and men are collected quickly in emergency cases.

The power on these cars could also be made use of for such purposes as operating rail saws, drilling machines, putting in screws, spikes, etc.

After becoming familiar with the motor car, the foremen are quick to recognize its merits and with the men give it their best support. Men are more readily secured on sections where these cars are operated.

Light repairs to these cars can be readily made by the foreman, and it very rarely becomes necessary to shop the cars for repairs to the motor or parts. Their use may be abused, however, and excessive rate of speed and disregard of

trains would sooner or later result in accidents and heavy repair cost. This difficulty is to be avoided by issuing and enforcing stringent rules as to the use and care of the cars.

4. Your committee urges the adoption of motor section cars and recommends their general use especially on portions of the road where the volume of traffic is not exceptionally heavy.

Those interested in the proposition should get Catalogue No. 43, issued by the Chicago Pneumatic Tool Co. It tells all about the Rockford Railway Motor Car.

Wasted Words.

"Hello, old man, I'm mighty glad to see you. Gee, you're looking fine. How is your wife and how are the babies? It's good for sore eyes to have a look at you. Say, you must have found the fountain of youth. You look younger every time I meet you. I heard a friend of mine say a mighty nice thing about you the other day. I intended to remember it, but I've forgotten just now what it was. I'll remember it in a minute. How do you keep yourself in such fine trim, anyhow? I wish I knew how to——"

"It's no use. There's not a thing in your line that I want to buy. I'm all stocked up."

And They Went in and Had Something.

A pneumatic tool salesman was one day accosted on the street by a man who knew his face but could not quite place him.

"Now, where in hell have I seen you?" he asked perplexedly.

"From where in hell do you come, sir?"

He Learned Something.

New Pneumatic Tool Salesman—Wonder why they are shipping so many drills to Europe?

Old Pneumatic Tool Salesman—Why, to drill the soldiers, you old chump.

But the best way to balance an account is to square it.

Alphabet of Proverbs.

A grain of prudence is worth a pound of craft.

Boosters are cousins to liars.

Confession of a fault makes half amends.

Denying a fault doubles it.

Envy shooteth at others and woundeth herself.

Foolish fears double danger.

God reaches us good things by our own hands.

He has hard work who has nothing to do.

It costs more to avenge wrongs than to bear them.

Judgment should be exercised in all things.

Knaving is the worst trade.

Learning makes a man a fit companion for himself.

Modesty is a guard to virtue.

Not to hear conscience is the way to silence it.

One hour today is worth two tomorrow.

Proud looks make foul work in fair faces.

Quiet conscience gives quiet sleep.

Richest is he who wants least.

Some faults indulged are like little thieves.

The boughs that bear most hang lowest.

Upright walking is sure walking.

Virtue and happiness are near akin.

Worth creates more opportunities than can be filled.

'Xperience is a wise counsel, but the price one often has to pay cuts deeply.

You never lose by a good turn.

Zeal without knowledge is like fire without life.

His Daughter's Voice.

Patrick sat in the kitchen watching his wife peel potatoes. Mary Ann, their daughter, was in the front room playing the piano and singing at the top of her voice.

"Patrick," said his wife, "phwat does the singing tacher mane when he says, 'Mary Ann's voice is mellow?'"

"Oh," said Patrick, "that's jest a nice name for rotten. These music fellers they do be so polite."



However, there are many fair singers who are not blonds.

Ready money is seldom ready when you want to borrow some.

The young widow begins to talk about her late husband rather early.

Money you bet on the mare doesn't always push her under the wire first.

Nothing is gained by abusing those whose opinions differ from your own.

A man may boast of his ancestors because he has nothing to look forward to.

It is far easier to acquire a reputation for greatness than it is to make good.

Many a woman who doesn't know her own mind gives her husband pieces of it.

Who ever saw a free show that didn't have some kind of a string attached to it?

If a man didn't make an occasional mistake his friends would have no kicks coming.

When a woman is able to make some other woman jealous she realizes that she has not lived in vain.

Before congratulating yourself when you come out on top, bear in mind that the froth on a glass of beer does the same.

The worst thing we can take for a cold is advice.

A man has no real kick coming when his wife talks to herself.

Many an expert swimmer has been drowned in the sea of matrimony.

Some girls become squint eyed from perusing the magazine beauty hints.

It's impossible to suppress the man who thinks he can tell a funny story.

When an old-fashioned farmer travels he carries most of his baggage in his pockets.

It takes a man to offer an explanation to his wife that doesn't explain anything.

The road to success is open to all, but too many want to get there without the trouble of going.

Every man who thinks he does all the work he is capable of doing would probably do more if offered a bonus.

It doesn't take a woman long to get wise to a man's actions after marrying him—then she proceeds to call his bluff.

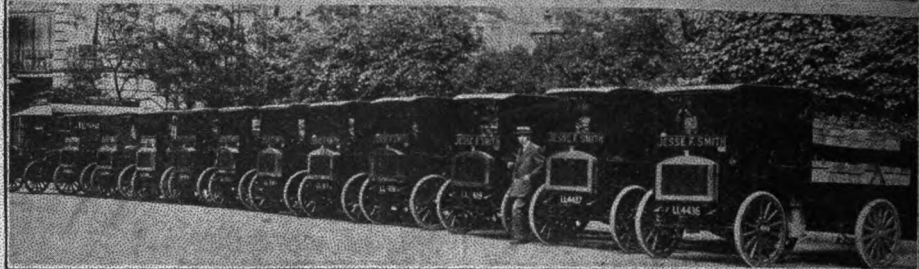
Some men find it so difficult to save a little money when single that they don't even think it worth while to try after marrying.

THE CHICAGO PNEUMATIC T O O L C O M P A N Y

MANUFACTURE THE FOLLOWING
PNEUMATIC TOOLS, APPLIANCES, ETC.

After Coolers	Grinders, Portable Electric
Air Compressors	Hammers, Riveting
Air Economizers	Hammers, Chipping and
Air Forge, Chicago	Calking
Air Motors	Hammers, Stone
Air Receivers	Hoists, Duntley Electric
Air Jacks	Hoists, Pneumatic Geared
Airoilene	Hoists, Straight Lift
Airoilene Grease	Holders-on
Angle Gears, Little Giant	Hose, Special High Grade
Angle Gears, Boyer	Hose Clamp Tool
Annealing Machines	Hose Couplings (Universal)
Armour Scaling Machines	Inter-Coolers
Automatic Oiling Devices	Magnetic Old Man
Bell Ringers, Little Giant	Oil Driven Compressors
Blow-off Cocks, Little Giant	Oil Engines
Chucks, Drill	Painting Machines
Chucks, Expanding	Pipe Bending Machines
Commercial Car, Cranes	Pneumatic Saws
Drift Bolt Drivers	Pneumatic Plate
Drills, Boyer	Straighteners
Drills, Keller	Railway Motor Section Cars
Drills, Little Giant	Reamers
Drills, Rock	Reheaters
Drilling Stands	Rivet Busters
Elevators	Riveters, Jamb
Electric Drills, Duntley	Riveters, Yoke
Electric Grinders, Duntley	Riveters, Compression
Engineers' Valves	Sand Rammers
Flue Cutters, Chicago	Sand Sifters
Flue Rollers, and Ex-	Speed Recorders
panders, Little Giant	Staybolt Chucks
Gas Engines	Stone Dressers
Gasoline Driven Com-	Staybolt Nippers
pressors	Vacuum Pumps
Gasoline Engines	Winches, Portable

Some Little Giant Fleets



If you are contemplating the installation of a fleet or a single truck, write us

Chicago Pneumatic Tool Co.

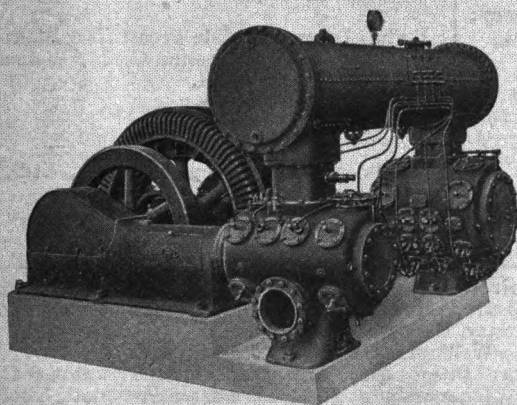
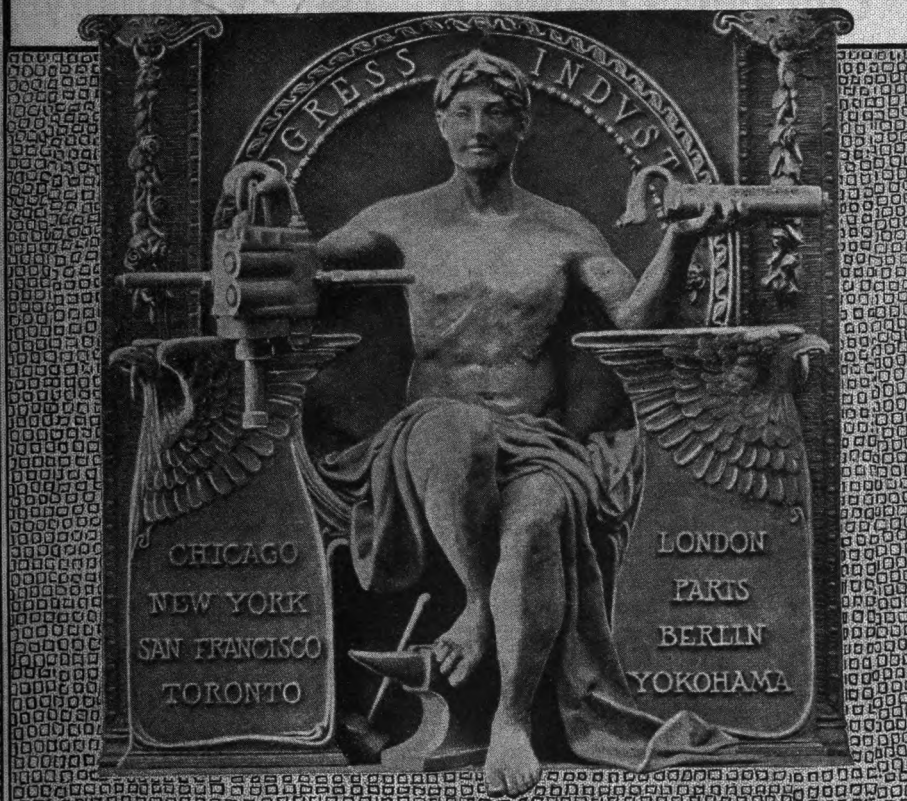
1014 Fisher Bldg.
Chicago

Branches
Everywhere

50 Church Street
New York

Digitized by Google

IDEAL POWER



Type O-CE "Chicago Pneumatic" Compressor.

PUBLISHED MONTHLY BY
Chicago Pneumatic Tool Company
CHICAGO NEW YORK

Digitized by

Google

Fa

Chicago Pneumatic Tool Company

General Office, Fisher Bldg.

CHICAGO

Eastern Office, No. 52 Vanderbilt Ave.

NEW YORK

BRANCH OFFICES

Boston: 185 Pleasant Street	Louisville, Ky., 31 Todd Bldg.
Birmingham: 634 Brown-Marx Bldg.	Marquette, Mich.: Lake Shore Eng. Wks.
Buffalo: 503 Ellicott Square Bldg.	Philadelphia: 1740-42 Market St.
Cincinnati: 1008 Mercantile Library Bdg.	Pittsburgh: 10 and 12 Wood St.
Cleveland: 1241 E. 49th St.	Portland, Ore.: 46-48 Front St.
Cleveland: 2122 Euclid Ave.	Richmond, Va.: 1004 Mutual Bldg.
Detroit: 2nd Ave. and Amsterdam St.	Salt Lake City: 117-119 W. 2nd South St.
El Paso: 303 San Francisco St.	Seattle: 122 King St.
Erie, Pennsylvania	Spokane: Cor. R. R. and Wall St.
Franklin, Pennsylvania	St. Louis: 813-19 Hempstead St.
Los Angeles: 241-243 So. Los Angeles St.	St. Paul: Pioneer Bldg.
	San Francisco: 71 First St.

FOREIGN

Canada: { Montreal, Canadian Pneumatic Tool Co.	
{ The Holden Co., Ltd., Montreal, Toronto, Winnipeg.	
British Columbia: Vancouver, Holden Co., Ltd., 429 Pendar St.	
Mexico: Mexico City, The General Supply Co., Av. Isabel La Catolica, No. 51.	
Northern Mexico: (Sonora and Chihuahua), Don A. Carpenter & Co., El Paso, Tex.	
Great Britain: { London, The Consolidated Pneumatic Tool Company	
Spain: { Ltd., 9, Bridge Street, Westminster, S. W.	
Portugal: {	
France: Paris, Anciens Etablissement Glaenger & Perreaud 18-20 Faubourg du Temple.	
Belgium: Brussels, The Consolidated Pneumatic Tool Co., Ltd., 22 Chaussee de Forest, Porte de Hal.	
Italy: Milan, The Consolidated Pneumatic Tool Co., Ltd., via A Cappellini 7.	
Germany:	
Austria Hungary:	
Balkan States:	} Berlin, Internationale Pressluft & Elektrizitäts-Gesellschaft m. b. H. Berlin C. 54, Weinmeisterhof, Weinmeisterstrasse No. 14.
Norway:	
Sweden:	
Holland:	
Switzerland:	
Denmark:	
Russia: { St. Petrograd Phoenix Engineering Works Co., Ltd., Polustrovskaya Quay No. 39.	
India: { Bombay, Consolidated Pneumatic Tool Co., Ltd., Rampart Row, Fort.	
{ Calcutta, The Consolidated Pneumatic Tool Co., Ltd., 8 Lal Bazar St	
Japanese Empire: Tokyo, Osaka, Seoul, Dairen, The F. W. Horne Co.	
Philippine Islands: Manila, Frank L. Strong Machinery Co., 64-68 Echague.	
Australia: Sydney, Henry W. Peabody & Co.	
New Zealand: Wellington, Henry W. Peabody & Co.	
South America: Buenos Aires, Argentina, Evans, Thornton & Co.	
South Africa: { Johannesburg, The Consolidated Pneumatic Tool Co., Ltd., 3 and 9 Cullinan Buildings.	

BULLETIN DIRECTORY

Requests for these bulletins should be directed to our Chicago or New York offices or to our nearest branch as shown on inside front cover.

PNEUMATIC TOOLS

- 121... Pneumatic Rammers and Foundry Appliances.
- 124... Pneumatic Riveting, Chipping, Calking and Stone Hammers.
- 125... Pneumatic Yoke, Jam and Shell Riveters, Holders-on, Drift Bolt Drivers, Rivet Busters.
- 126... Compression Riveters.
- 127... Pneumatic Drills, Corner Drills, Reamers, Wood Borers, Flue Rolling and Tapping Machinery and Grinders.
- 128... Miscellaneous equipment for Pneumatic Drills, viz: Chucks, Twist Drills, Reamers, Augers, Flue Cutters, Flue Expanders, Angle Gears.
- 129... Hose, Hose Couplings and Hose Clamp Tools.
- 130... Lubrication of Pneumatic Tools.
- 131... Miscellaneous Tools, viz: Pipe Benders, Air Forge, Bolt Nipper, Drilling Stands, Blow-off Cocks, Bell Ringers, Drill Repair Vises, Painting Machines.
- 132... Pneumatic Motors and Pneumatic Geared Hoists.
- 133... Cylinder Air Hoists and Jacks.

ELECTRIC TOOLS

- E-22.. Heavy Duty Electric Drills, Alternating Current.
- E-25.. Electric Hoists.
- E-29.. Duntley Electric Grinders.
- E-31.. Duntley Electric Drilling Stands.
- E-32.. Duntley Track Drills.
- E-34.. Duntley Electric Hammer Drill.
- E-35.. Duntley Universal Electric Drills.

AIR COMPRESSORS AND FUEL OIL ENGINES

- 34-A.. Class "G" Steam Driven. "Chicago Pneumatic" Compressors.
- 34-B.. "Chicago Pneumatic" Power Driven Compressors.
- 34-C.. "Chicago Pneumatic" Gasoline and Fuel Oil Engine Driven Compressors.
- 34-D.. "Chicago Pneumatic" Corliss Compressors, Steam Driven.
- 34-F.. Design and Construction Class "G" "Chicago Pneumatic" Compressors.

- 34-G.. Air Receivers, Aftercoolers, Reheaters, etc.
- 34-H.. General Instructions for Installing and Operating "Chicago Pneumatic" Compressors.
- 34-K.. Class N-SO and N-SG Fuel Oil and Gas Driven Compressors.
- 34-L.. General Pneumatic Engineering Information.
- 34-M.. Class "O" "Chicago Pneumatic" Steam and Power Driven Compressors.
- 34-N.. Class N-SS and N-SB Single Enclosed Compressors.
- 34-O.. Instructions for the Installation and Care of "Chicago Pneumatic" Gasoline Driven Air Compressors.
- 34-P.. Class M-CB and M-CE New Enclosed Type Self-Oiling "Chicago Pneumatic" Power Driven Compressors.
- 34-R.. Class L-SS and L-SB New Enclosed Type Self-Oiling "Chicago Pneumatic" Compressors.
- 34-S.. Small Power Driven Compressors.
- 34-T.. Class "M" Corliss Enclosed Type Self-Oiling Four Valve "Chicago Pneumatic" Steam Driven Compressors.
- 34-W.. Class A-O Fuel Oil Engines.

ROCK DRILLS AND HAND DRILLS

- 148.. Chicago Valveless Hand Drills.
- 149.. Chicago Portable Mine Hoist.
- 150.. Chicago Coal Drills.
- 151.. Chicago Slogger Rock Drills.
- 152.. Chicago Gatling Drills.
- 153.. Chicago Sinker.
- 154.. Chicago Stoper.
- 172.. Chicago Plug and Feather Drill.

LITTLE GIANT TRUCK

- 211.. Specifications on 1 and 1½ ton Little Giant Truck.
- 190.. Put Your Ear to the Ground and Listen.

ROCKFORD and MISCELLANEOUS

- 42.. Boyer Speed Recorder.
- 43.. Rockford Railway Motor Car.
- 117.. Lubrication of Rockford Cars.
- 119.. Operation of Rockford Cars.
- 166.. Boyer Speed Recorder with Clock Attachment.

CHICAGO PNEUMATIC TOOL CO.

1014 Fisher Bldg., CHICAGO Branches Everywhere

52 Vanderbilt Ave., NEW YORK

When writing to advertisers please mention Ideal Power.

CONVENTION DATES.

May 17, 18, 19, 1915—Railway Storekeepers' Ass'n at Hotel Sherman, Chicago.
 May 17-20, 1915—The International Railway Fuel Ass'n at Hotel La Salle, Chicago.
 May 20-21, 1915—American Association of Railroad Superintendents at San Francisco.
 May 26 to 28, 1915—Master Boiler Makers Ass'n at Chicago.
 June 9-11, 1915—American Railway Master Mechanics' Ass'n at Atlantic City, N. J.
 June 14-16, 1915—Master Car Builders' Ass'n at Atlantic City, N. J.
 July 14-17, 1915—International Railway General Foremen's Ass'n at Sherman House, Chicago.
 Aug. 17, 1915—International Railroad Master Blacksmiths' Ass'n at Philadelphia.
 Sept. 14-16, 1915—Roadmasters' and Maintenance of Way Ass'n at Chicago.
 October, 1915—American Electric Railway Ass'n at San Francisco.
 October, 1915—American Electric Railway Manufacturers' Ass'n at San Francisco.
 October 19-21, 1915—American Railway Bridge and Building Ass'n at Detroit, Mich.

ENGINEERING SOCIETIES, ETC.

American Association of Railroad Superintendents—Secretary, E. H. Harman, St. Louis, Mo.
 American Concrete Institute—Secretary, Edw. E. Krauss, Harrison Bldg., Philadelphia, Pa.
 American Electric Railway Engineering Association—Secretary-Treasurer, E. B. Burritt, 29 W. 39th St., New York, N. Y.
 American Highway Association—Executive Secretary, I. S. Pennybacker, Colorado Bldg., Washington, D. C.
 American Institute of Electrical Engineers—President, Paul M. Lincoln, care of W. E. & M. Co., Pittsburgh, Pa.; Secretary, F. L. Hutchinson, 33 W. 39th St., New York.
 American Institute of Mining Engineers—Secretary, Bradley Stoughton, 29 W. 39th St., New York City.
 American Mining Congress—Secretary, J. F. Callbreath, Jr., 1021 Munsey Bldg., Washington, D. C.
 American Order of Steam Engineers—Supreme Chief Engineer, J. W. Fairlent, Philadelphia, Pa.; Supreme Corresponding Engineer, Edw. A. Reboul, 1110 Earl St., Philadelphia, Pa.
 American Railway Engineering Association—Secretary, E. H. Fritch, 1011 Karpen Bldg., Chicago, Ill.
 American Road Builders' Association—Secretary, E. L. Powers, 150 Nassau St., New York.
 American Society of Civil Engineers—Secretary, Chas. Warren Hunt, 220 W. 57th St., New York City.
 American Society of Engineering Contractors—Secretary, J. R. Wemlinger, 11 Broadway, New York City. Meetings: Second Thursday every month.
 American Society of Heating and Ventilating Engineers—Secretary, J. J. Blackmore, 29 W. 39th St., New York City.
 American Society of Mechanical Engineers—Secretary, Calvin W. Rice, 29 W. 39th St., New York City.
 American Society of Naval Engineers—Secretary-Treasurer, Lieut. A. T. Church, U. S. N., Navy Department, Washington, D. C.
 American Water Works Association—Secretary, J. M. Diven, 47 State St., Troy, N. Y.
 Association of Civil Engineers, Cornell University—President, A. F. Williams, Ithaca, N. Y.; Secretary, A. S. Patrick, Ithaca, N. Y.
 Association of Engineering Societies—Chairman Board of Managers, John W. Woermann, 428 Custom House, St. Louis,

Mo.; Secretary, Joseph W. Peters, 3817 Olive St., St. Louis, Mo.
 Association of Railway Electrical Engineers—Secretary, J. A. Andreucetti, C. & N. W. Ry. Co., Chicago, Ill.
 Boston Society of Civil Engineers—Secretary, S. Everett Tinkham, 715 Tremont Temple, Boston, Mass.
 Canadian Society of Civil Engineers—Secretary, Clement H. McLeod, 176 Mansfield St., Montreal, Can.
 Canadian Railway Club—Secretary, James Powell, Grand Trunk Ry., Montreal, Que.
 Central Railway Club—Secretary, H. D. Vought, 95 Liberty St., New York.
 Civil Engineers' Society of St. Paul—Secretary, Edw. J. Dugan, Room 7, Old State Capitol Bldg., St. Paul, Minn.
 Cleveland Engineering Society—Secretary, David Gaehr, Chamber of Commerce Bldg., Cleveland, Ohio.
 Connecticut Society of Civil Engineers—President, Geo. K. Crandall, New London, Conn.; Secretary-Treasurer, J. Frederick Jackson, Box 1304, New Haven, Conn.
 Detroit Engineering Society—Secretary-Treasurer, Frederick H. Mason, 614 Moffat Bldg., Detroit, Mich.
 Engineering Association of the South—Secretary-Treasurer, J. C. Evans, Nashville, Tenn., Carnegie Library.
 Engineers' Club of Cincinnati—Secretary, E. A. Gast, P. O. Box 333, Cincinnati, Ohio.
 Engineers' Club of Minneapolis—President, L. S. Gillette, 74 Chamber of Commerce, Minneapolis, Minn.; Secretary, Louis Clousing, 2411 Oakland Ave., Minneapolis.
 Engineers' Club of Philadelphia—Secretary, H. L. McMillan, 1317 Spruce St., Philadelphia, Pa.
 Engineers' Club of St. Louis—Secretary, W. W. Horner, 5203 Maple Ave., St. Louis, Mo.
 Engineering Societies of Purdue University, Lafayette, Ind.—Secretary, C. B. Penrod, 123 State St., W., Lafayette, Ind.
 Engineering Society of Buffalo—President, David Bell; Secretary, John Younger, 27 Horton Pl., Buffalo, N. Y.
 Engineers' Society of Pennsylvania—Secretary, E. R. Dasher, 31 So. Front St., Harrisburg, Pa.
 Engineers' Society of Northeastern Pennsylvania—Secretary, A. D. Blackinton, Scranton, Pa.
 Engineers' Society of Western Pennsylvania—Secretary, Elmer K. Hiles, 2511 Oliver Bldg., Pittsburgh, Pa.
 Illinois Society of Engineers and Surveyors—Secretary, E. E. R. Tratman, Wheaton, Ill.
 Indiana Engineering Society—Secretary, Chas. Brossmann, Indianapolis, Ind.
 International Railway Congress Association—President (of the International Commission), W. Toudeller, 11 Rue de Louvain, Brussels, Belgium; Secretary General, L. Weissenbruch, same address.
 Iowa Engineering Society—Secretary-Treasurer, Prof. J. H. Dunlap, Iowa City, Iowa.
 Lake Superior Mining Institute—Secretary, A. J. Yungbluth, Ishpeming, Mich.
 Louisiana Engineering Society—President, W. H. Williams; Secretary, W. T. Hogg, State Museum Bldg., New Orleans, La.
 Michigan Engineering Society—President, Delmar E. Teed, Cadillac, Mich.; Secretary, Samuel J. Hoexter, Ann Arbor, Mich.
 Montana Society of Engineers—President, Reno H. Sales, Butte, Mont.; Secretary, Clinton H. Moore, Butte, Mont.
 Ohio Engineering Society—President, C. E. Sherman, Columbus, O.; Secretary, D. W. Seitz, Columbus, O.
 Ohio Society of Mechanical, Electrical and Steam Engineers—Secretary-Treasurer, Frank E. Sanborn, Ohio State University, Columbus, O.

Rochester Engineering Society of Rochester—Secretary-Treasurer, Wm. F. Devendorf, 350 East Ave., Rochester, N. Y.

Toledo Society of Engineers—President, L. M. Gram, 1047 Spitzer Bldg., Toledo, O.; Secretary, L. T. Owen, 1047 Spitzer Bldg., Toledo, O. Regular meeting second Friday in each month.

Utah Society of Engineers—Secretary Frank W. Moore, 111 Newhouse Bldg., Salt Lake City, Utah. Third Friday of each month except July and August.

Vermont Society of Engineers—Secretary, Geo. A. Reed, Barre, Vt.

Western Society of Engineers—President, E. H. Lee, Dearborn Sta., Chicago; Secretary, J. H. Warder, 1735 Monadnock Blk., Chicago.

MECHANICAL AND TRADE SOCIETIES.

Air Brake Association—Secretary, F. M. Nellis, 53 State St., Boston, Mass.

American Boiler Manufacturers' Association—President, W. C. Connelly, E. Cleveland, Ohio; Secretary, J. D. Farasey, 37th St. and Erie Ry., Cleveland, O.

American Electric Railway Association—Secretary-Treasurer, E. B. Burritt, 29 W. 39th St., New York City.

American Electric Railway Manufacturers' Association—Secretary-Treasurer, H. G. McConnaughy, 165 Broadway, New York City. American Foundrymen's Association—Secretary, A. O. Backert, 12th and Chestnut Sts., Cleveland, Ohio.

American Institute of Metals—Secretary-Treasurer, W. M. Corse, 106 Morris Ave., Buffalo, N. Y.

American Railway Association—General Secretary, W. F. Allen, 75 Church St., New York City.

American Railway Bridge and Building Association—President, L. D. Hadwen, C., M. & St. P. Ry., Chicago; Secretary, C. A. Lichty, C. & N. W. Ry., Chicago.

American Railway Master Mechanics' Association—President, F. F. Gaines, S. M. P. Central of Ga. Ry., Savannah, Ga.; Secretary, J. W. Taylor, Karpen Bldg., Chicago.

American Railway Tool Foremen's Association—Secretary-Treasurer, A. R. Davis, 750 Pine St., Macon, Ga.

Association of Maintenance Way Master Painters (United States and Canada)—President, J. S. Rice, L. S. & M. S. R. R., Elkhart, Ind.; Secretary, Harry J. Barkley, I. C. R. R., Carbondale, Ill.

Boiler Makers' Supply Men's Association—Secretary, Geo. Slate, The Boiler Maker, 17 Battery Pl., New York City.

Canadian Association of Stationary Engineers—Secretary, W. A. Crockett, Mount Hamilton, Ont., Can.

Canadian Roadmasters' Association—Secretary, J. M. Mackenzie, West Toronto, Can.

Car Foremen's Association of Chicago—President, Chas. J. Wymer, Belt Ry. of Chicago; Secretary, Aaron Kiline, 841 N. 50th Ct., Chicago.

General Superintendents' Association of Chicago—Secretary, A. M. Hunter, 321 Grand Central Station, Chicago.

International Railroad Master Blacksmiths' Association—Secretary, A. L. Woodworth, C. H. & D. Ry., Lima, O.

International Railway Fuel Association—C. G. Hall, Secretary, 922 McCormick Bldg., Chicago.

International Railway General Foremen's Association—Secretary-Treasurer, Wm. Hall, C. & N. W. Ry., 1126 W. Broadway, Winona, Minn.

International Union of Steam Engineers—President, Matt Comerford; Secretary-Treasurer, James G. Hannahan, 6334 Yale Ave., Chicago.

Master Boiler Makers' Association—President, James T. Johnston, G. B. I., C. P. R. R.,

1387 W. 30th St., Los Angeles, Cal.; Secretary, Harry D. Vought, 95 Liberty St., New York City.

Master Car Builders' Association—President, D. F. Crawford, G. S. M. P., Fenna Lines, Pittsburgh, Pa.; Secretary, J. W. Taylor, Karpen Bldg., Chicago, Ill.

Master Car and Locomotive Painters' Association—Secretary A. P. Dane, B. & M. R. R., Reading, Mass.

Maintenance of Way Master Painters' Association—Secretary, T. I. Goodwin, C., R. I. & P., Eldon, Mo.

National Association of Stationary Engineers—Secretary, Fred W. Raven, 417 S. Dearborn St., Chicago, Ill.

National Founders' Association—Secretary, J. M. Taylor, Room 842, 29 S. La Salle St., Chicago, Ill.

National Railway Appliances Association—Secretary, Bruce V. Crandall, 14 E. Jackson Blvd., Chicago, Ill.

Railway Equipment Manufacturers' Traveling Engineers' Association—President, Wm. S. Flurry, Ohio Injector Co., Monadnock Blk., Chicago; Secretary, F. N. Bard, Barco Brass & Joint Co., 230 N. Jefferson St., Chicago, Ill.

Railway Signal Association—President, Thos. S. Stevens, A., T. & S. F. Ry., Topeka, Kans.; Secretary, C. C. Rosenberg, Bethlehem, Pa.

Railway Storekeepers' Association—President, G. G. Allen, G. S., K. C., M. & St. Paul R. R., Milwaukee, Wis.; Secretary, J. P. Murphy, Box C, Collinwood, O.

Railway Supply Manufacturers' Association—Secretary, J. D. Conway, 2136 Oliver Bldg., Pittsburgh, Pa.

Roadmasters' and Maintenance of Way Association—Secretary-Treasurer, L. C. Ryan, C. & N. W. Ry., Sterling, Ill.

Supply Men's Association of American Boiler Manufacturers' Association of United States and Canada—President, J. T. Corbett (J. T. Ryerson & Son), Chicago; Secretary, F. B. Slocum (Continental Iron Works), Brooklyn, N. Y.

Traveling Engineers' Association—Secretary, W. O. Thompson, N. Y. C. Car Shops, East Buffalo, N. Y.

He who will not reason is a bigot; he who cannot is a fool; and he who does not is a slave.—Byron.

Some of us get in the limelight before we have time to put on our makeup.

Easily Pleased.

Gabe—What is an optimist?

Steve—An optimist is a cross-eyed man who is thankful that he isn't bow-legged.

Trying to Please One.

Angry Diner—Waiter, you are not fit to serve a pig!

Waiter—I—am doing my best, sir.

The average man wastes a lot of energy in laughing at his own jokes.

No. 106

Economy in High Speed Drilling?

Yes: Providing you use a properly made, uniformly tempered Drill
 "CLEVELAND" Drills can always be depended on

The **CLEVELAND** Twist Drill Co.
 CLEVELAND Chicago

NECESSITIES

High Grade Rubber Goods
 Fire Hose
 Reels, Nozzles
 Fire Hose Carts
 Rubber Cement
 P. & W. Rubber Preservative
 Rubber Boots
 Leather-Soled Rubber Boots

Leather Belting
 Upholsterer's Leather
 Leather and Silk Fringes
 Vestibule Diaphragms
 Gimp
 Brass Nails
 Leather Head Nails

Signal Flags
 Bunting
 Linoleum
 Cab Cushions
 Cab Curtains
 Track Jacks
 Economy Soap Stock
 Nut Locks

GUILFORD S. WOOD

Great Northern Building

CHICAGO, ILLINOIS

BURKE ELECTRIC COMPANY

MAIN OFFICE AND WORKS

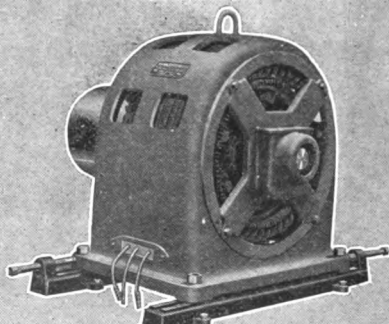
ERIE, PA.

BULLETIN 114

JULY, 1914

POLYPHASE INDUCTION MOTORS

SIZE 1.5 TO 100 H. P.



TYPE A1 INDUCTION MOTOR

This Bulletin

is free on your request. You will be better informed on the construction as well as operation of induction motors if you get it and read it.

**BURKE
ELECTRIC
COMPANY**

**ERIE,
PA.**

BURKE ELECTRIC CO., Erie, Pa.
 Please Send Bulletin 114-C

Name
 Address

IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances
By THE IDEAL POWER PUBLISHING COMPANY
Fisher Building Chicago

Vol. 11.

May, 1915.

No. 5.

Up to the Minute Design

By W. H. CALLAN

Manager, Compressor and Engine Plant, Chicago Pneumatic Tool Co.

"Improvement coming from independent thought, with reason, is what is needed in engine design. Following tradition is an impediment to progress. Just because George Corliss designed a part a certain way forty years ago it does not necessarily follow that it should be made just that way forever after."

The new line of Inclosed Self-Oiling Compressors and "Giant" Fuel Oil Engines, which has recently been brought out by the Chicago Pneumatic Tool Company, has a great deal of individuality in its design.

One of the principal features is the crosshead used in these compressors and engines. As the photograph shows, it is of the box type; that is, without adjustable shoes, and is turned to perfectly fit the bore of the crosshead guide. This construction is much better than one with loose shoes for the following reasons:

(1) It is properly fitted before leaving the factory, therefore will never heat or pound.

(2) It cannot be tampered with by a fussy engineer.

(3) It is about twice the length of the ordinary adjustable shoe crosshead; hence it overtravels the guide nearly half its length at each end of the stroke, on account of which the wear on the

crosshead and guide is always in a straight line; therefore as Professor Sweet says, "Things that do not wear out of true do not wear much."

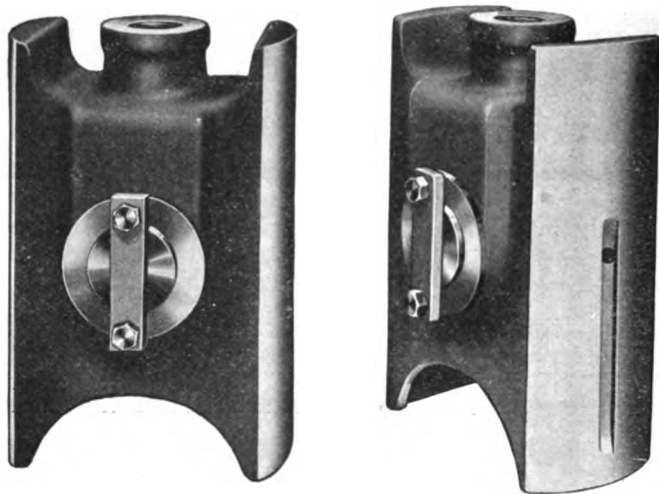
(4) The bearing pressure per square inch is less than half that which it is on the ordinary short adjustable shoe crosshead, consequently mechanical losses and wear are much less.

(5) It is better to have the shoe cast integral, because it can never become loose when running, and wedge in guide, causing damage; it is also more rigid and firm, and, on account of this, furnishes a complete and uniform bearing over its entire length, resulting in little or no wear.

(6) It is better solid for the reason that the center of the crosshead always remains in the center of the guide, as it cannot be adjusted out of center like the ordinary loose shoe type.

(7) The solid feature is of great advantage on account of there being no joints, adjustable shoes, or parts fit together to become distorted from being improperly fit, incorrectly adjusted, or sprung out of shape through incompetent handling.

(8) The cost of upkeep will be nothing, as there is nothing to get out of order.



Two Views of the New Type of Crosshead.

The life of this crosshead will be greater than that of any other part on the machine, as from actual service, it has been found that after five years' running the tool marks are still present on the wearing surface, and if properly lubricated and the bath of oil in which it runs is kept clean, the manufacturers stand ready to guarantee this type of crosshead for any length of time the purchaser wishes.

New Bulletin on Class "O" Steam and Power Driver Compressors.

Bulletin 34-M has just been issued by the Chicago Pneumatic Tool Co. in which their Class "O" Compressors are fully described and illustrated. The Simplate valves, two and four-step capacity regulation, and other special and interesting features, are treated at length. The Bulletin will be sent on request.

Two soldiers were speaking about the Battle of Bull Run. One of them was a Yankee, and the other an Irishman.

"Pat," said the Yankee, "were you at the battle of Bull Run?"

"I was," said Pat.

"Did you run, too?"

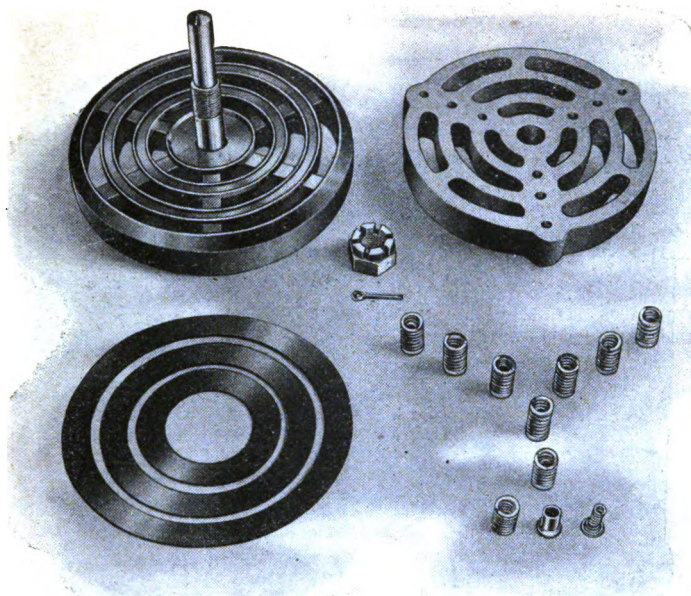
"I did," said Pat, "and the felly that didn't run is there yet."

Simple Valves for Air Compressors. (By W. P. Pressinger, Mgr. Compressor & Engine Dept. Chicago Pneumatic Tool Co.)

The Simple valve is used in all of the latest types of compressors manufactured by the Chicago Pneumatic Tool Company, designated as Class O, N, N-SO and N-SG machines.

As the illustrations show, the valve is extreme in its simplicity, and is provided with independent plates and springs, affording varied openings according to speed. At low speed but one plate moves, while at high speed all plates move; hence ideal operation under all speed conditions.

A comparison of this valve with other forms of plate valves used in other makes of compressors will readily show how extremely complicated these other forms of valves are in their construction, inasmuch as they afford no independent opening of the different ports, nor flexible spring action; being, instead complicated and delicate pieces of mechanism that move as a whole at each stroke, regardless of the operating speed, and are consequently noisy at low speeds, producing vibrations so severe as in some cases to shake the building in which the compressor containing them is located.



Component Parts of a No. 6 Inlet Valve. (Simplate.)

The Simplate Valve has plates of uniform section, each plate being independent of the other. The spring tension is such that but one ounce pressure per square inch is required to open the outer plate, and $2\frac{1}{2}$ ounces to open the inner one; hence at low speed the outer plate is the only one that will open, resulting in a varied area with absolutely silent service at all speeds.

Other plate valves not only lack the independent action over each port, but being rigidly bound in the center, must, in order to operate, bend forward and back with each opening and closing, and must surely in a short time give way and break. Not only is this plate design difficult to apply and maintain, but it is grossly inefficient, noisy at low speed, and cannot be operated without an excessive vacuum in the cylinder. The unequal expansion and contraction, due to the un-uniform section of the plate, will inevitably permit leakage of air, and the constant bending back and forth will soon cause a permanent set, and the plate will no longer lay tightly on its outer seat. Furthermore, the

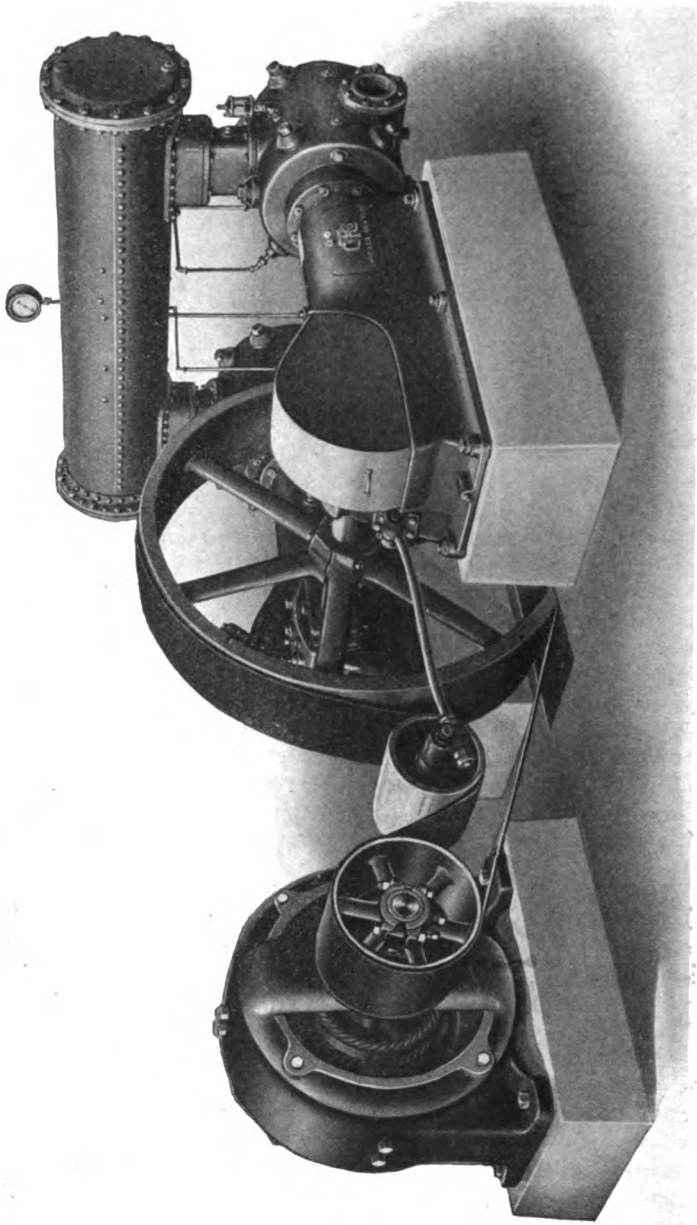
spring tension is the same with both inlet and discharge valves. Should any mishap occur (such as the breakage of a piece from the outer ring), the whole expensive and complicated plate must be provided in replacement.

With the Simplate Valve it is only necessary to replace the particular part that is broken; and in emergency, if no spare plates are at hand, a temporary repair may be effectually provided from a piece of sheet-iron, or other thin material, which will serve until the new parts are obtained. This is not possible with other forms of plate valves, as they can only be produced under skillful, expert supervision.

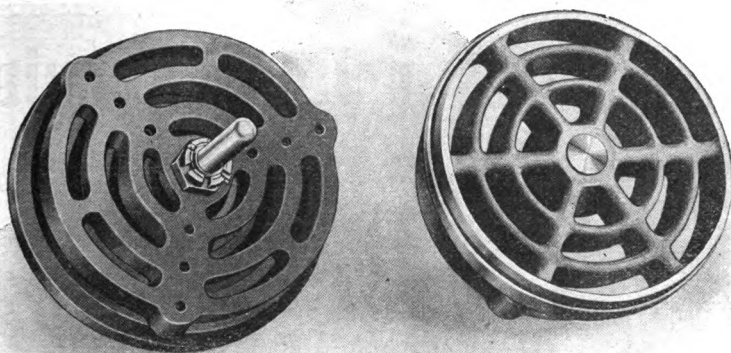
The plates in the Simplate valves are all interchangeable, which means that a plate can be transferred from a discharge valve to an inlet valve, or vice versa, as may be desired.

The Chicago Pneumatic Tool Company manufactures these valves, and they carry its guarantee against breakage.

Next in importance to the design of the plate valve itself is the application



Class O-CBE Two Stage Short Belt Driven Compressor with Floating Idler.



No. 6 Inlet Valve Assembled.

of the valves to the air cylinders. The Simplate Valves are placed radially in the cylinder, the inlet valves on one side, and the discharge valves on the other, the passage to each set being separated by water-jacketed walls. This arrangement reduces clearance space to a minimum, keeps the air inlet cool, assures high volumetric efficiency, and enables the quick location and easy remedy of any trouble that may arise. As an example, should an inlet valve become leaky, it may be located by feeling the covers over the inlet valves. If a valve leaks but slightly, the cover will be warm; and it is therefore a simple matter to discover and remedy the valve needing attention.

With other forms of valves the situation is quite different, as the valves are placed horizontally over the top of the cylinder and held in place by a tie-rod passing through their centers. With this complicated construction, should a leak develop it would be practically impossible to determine which valve leaks. It could not be located by placing the hand over the inlet passage, as this passage is surrounded by walls heated by the discharging air (obviously inefficient). If it is guessed that the first one in the row is the leaky valve, in order to make sure the cover must be taken off and the discharge valve removed; after which it becomes

necessary to take off the nut holding the inlet valve in position and slip the valve from the rod which holds them all in place.

After proceeding this far, should it be discovered that this particular valve is in good working-order, further search must be made to locate the trouble, which may be with some of the other valves at the end of the cylinder first approach, or perhaps at the other end of the cylinder. It then becomes necessary to put back the inlet valve that has been removed; but in doing so, should it fit tightly on the rod, or should the rod be jarred in any way when putting it back in place, the valves at the opposite end of the cylinder will be knocked from their seats, necessitating the removal of the cover on the opposite end; after which the valves must be lifted up and properly placed on their seats, and the search continued until the valve needing attention is finally found.

Sample Simplate Valve plates will be furnished to all interested at the Chicago Pneumatic Tool Company, Chicago, New York, or at any of its offices.

Those Obvious Signs.

A countryman on a visit to a city happened to see a sign, "Cast Iron Sinks." He looked at it a moment and then said: "Any fool knows that."

Safety First in Housekeeping



demands that germs and dust and dirt be kept out of your carpets, rugs and draperies by the use of a

Duntley Electric Cleaner

The most powerful and satisfactory portable vacuum cleaner made.

Made in sizes suitable for use in offices, hotels, theaters, churches, large or small homes, cottages or apartments, and for commercial cleaning.

If you believe in vacuum cleaning you will insist on a Duntley.

AGENTS WANTED

Some Good Territories Still Open

Duntley Products Sales Company

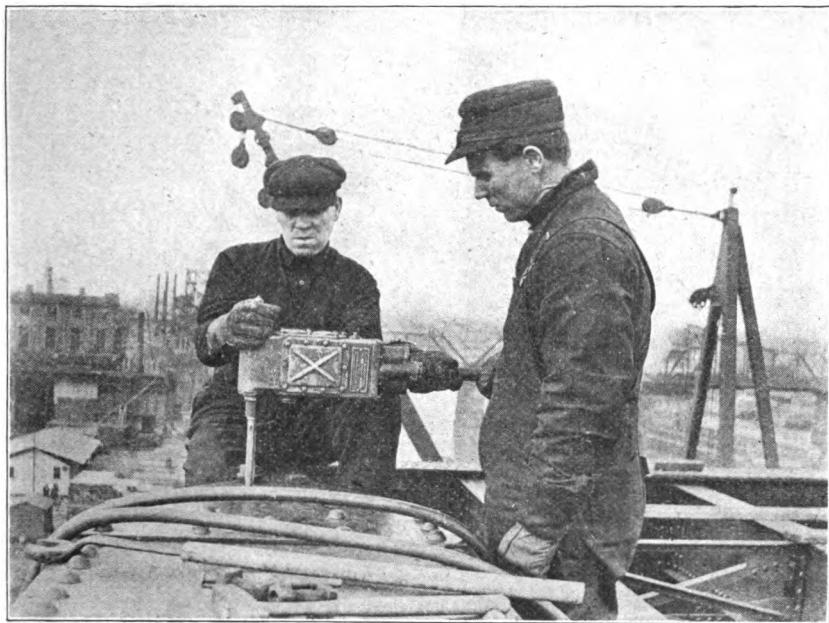
732 Michigan Ave., CHICAGO

I am in the market for a Duntley Electric Cleaner. Please quote me prices and send descriptive literature.

Name.....

Address.....

I am interested in agency proposition for following territory.....



Little Giant Corner Drill Using 13/16" High Speed Reamer on Harlem River Bridge, 129th St. and 2nd Ave., New York City.—Terry & Tench Co., Contractors.

The Earth Compeller.

Some poet stopped long enough to notice how Chicago Rock Drills do their work and this is what he said about them in a recent number of *Collier's*:

There's the man on the steam drill. His dentistry of the earth's crust is to be observed whenever an excavation for building foundations is torn out of the solid rock. Without this preliminary labor neither dynamite nor derricks avail. His weighted tripod is set up. The long drill rod is fixed in place. The steam is coupled on. Then begins the ceaseless pfutt—pfutt—pfutt—in explosive snorting. A helper, with a tin can attached to a stick, pours drink after drink into the drill hole. Unconcerned the man perches on the drill. He balances himself erect on the bucking tripod or sits gracefully on a projecting seat like the outrigger of a sailing canoe. The pulsation and din of his machine do not move him. The spurting plume of steam sometimes half conceals him; he sits reposeful but alert. Derricks carry

their loads over his head. Huge boulders and barrows full of splintered rock swing by, lurching and oscillating just above him. He does not heed them, rarely even looks up. The thunder of a blast not far away hardly makes him turn his head. The thrill and panoply of the battlefield are not for him. He makes no gallery play for the benefit of the onlookers who all day long line the brink of the yawning excavation. His attention is given to the quivering machine beneath him. Without him and his brothers the Panama Canal could never have come. Here is a hero of peace—steadfast, unassuming, and masterful.

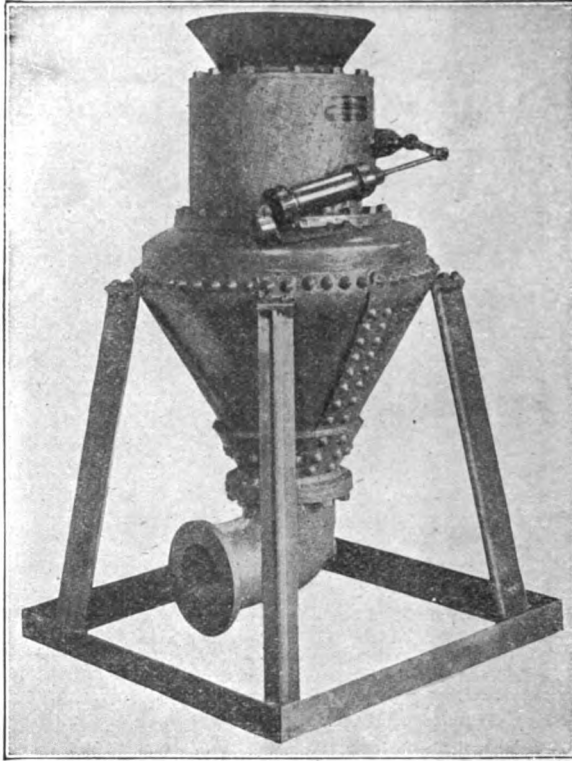
Sandy's Idea of a Treat.

A man dropped into a cafe one afternoon and saw his friend Sandy standing at the bar indulging in "a lone one."

He walked up to the bar and greeted Sandy.

"Will you have another one with me?"

"No, thank you," said Sandy, "but you can pay for this one if you will."



The Pneumatic Concrete Mixer and Conveyor.

HOW TO MIX AND PLACE CONCRETE BY COMPRESSED AIR.

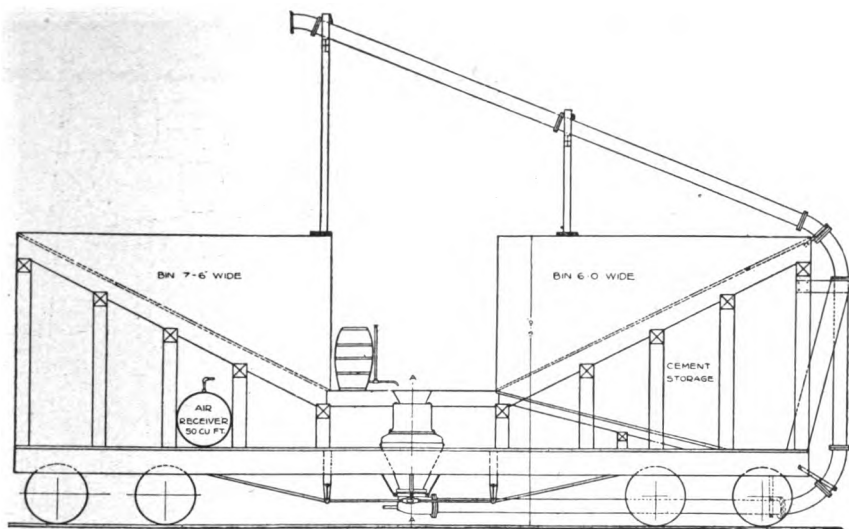
You know that the cost of handling material through a pipe—as in hydraulic pipe line dredging for example—is but a small fraction of the cost of handling material in any other way. The cost of transporting and handling concrete between the mixer and the forms by the old method is the biggest part of the cost of mixing and placing concrete. You can save this cost by using the Mac-Michael Pneumatic Mixer and Conveyor, a machine made by the Concrete Mixing and Placing Company, which takes an unmixed batch of concrete and, in one operation, mixes and delivers the concrete through a pipe to place in the forms.

An 8-in. pipe from the mixer to the forms takes the place of all the men used to haul, hoist and transport con-

crete, and eliminates the necessity of such plant as towers, runways, dinky engines, track, trestle, cars and other plant ordinarily required for this work.

The concrete is mixed with the same air which is used to convey it through the pipe to the forms. Within ten seconds after water has been added to the cement, the concrete is in the forms at rest. It is all done in one operation. The pipe is carried under tracks and around obstructions, so as to be out of the way of other work, and the concrete is placed and packed tightly in many difficult positions where the handling of concrete by hand would ordinarily be at a prohibitive cost.

Work in which this machine has already been used with great success is bridge construction, tunnel lining, retaining wall construction, heavy foundations and piers.



Car Equipped With Mixer for Tunnel Lining for C., B. & Q. R. R.

Data and Information.

The amount of air required for operating the machine depends upon the length of the delivery pipe. The amount will vary with the number of turns in the pipe line, with the kind of material used for aggregate, and also with the vertical distance involved in the delivery. For general purposes, however, the amount of air will not exceed one cubic foot of free air, compressed to 80 lbs., for each lineal foot of delivery pipe, for each batch of concrete.

The machines are made in $\frac{1}{4}$ and $\frac{1}{2}$ -yd. sizes and the amount of concrete which may be mixed and delivered to the forms in a given time depends upon the facilities for loading the mixer. Overhead bins for supplying the machine with materials by gravity will enable the mixer to be loaded twice each minute.

The delivery pipe used for this work should be made of No. 10 gauge metal or heavier. A heavy steel pipe may be economical where large quantities of concrete are to be placed without many changes in the moving of the pipe line. An 8-in. well casing is also an excellent pipe for this purpose.

Cost of Operation.

The labor cost of mixing and placing concrete by compressed air as taken

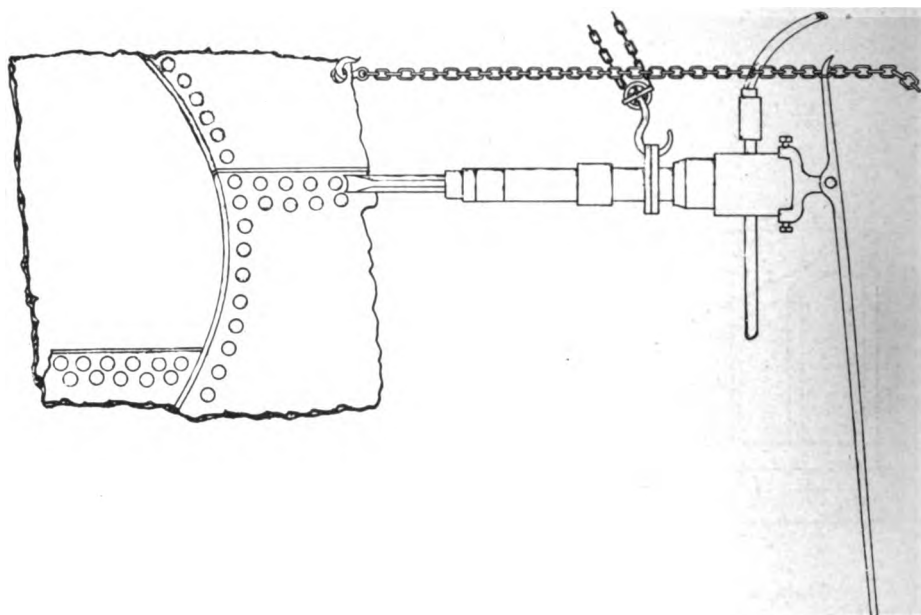
from actual records of both tunnel and open work, has varied from 15 cents to 55 cents per cubic yard. The ordinary gang consists of 8 men, as compared with 22 to 30 men required for any other method of doing similar work. The ordinary capacity of the $\frac{1}{4}$ -yd. machine is about 150 cu. yds. in ten hours and of the larger machine is about 250 cu. yds. in ten hours.

An example of the actual cost of ordinary work is given below. This concrete was placed in three separate and distinct walls. One was 20 feet below the elevation of the mixer and about 100 ft. to the west. The other two walls were at an elevation of 30 ft. above the mixer and 80 ft. to the east. This work is outside work; it is taken at random and it exhibits an average cost. The work was done at Niagara Falls, Ont., by the Ontario Power Company, on Sept. 10, 1913:

On Material Floor.	Rate Hour.
One foreman	\$0.35
Two laborers, hopper22½
Six laborers, chutes.....	.22½
Two laborers, cement.....	.22½

Machine.

One operator25
One watchman25
One dumper25



The No. 2 Boyer Rivet Buster in order to do its work efficiently must be held up to the work at the proper angle. The device here shown is one used by the German-American Car Co. with great success at their East Chicago Plant.

Handling Concrete.

One foreman45
Four spreaders25

Total per hour.....\$4.80

Machine operated 11 hrs., 15 min.

Changing pipe, 8 hrs., 45 min.

Total time, 20 hrs. or two 10-hr. shifts.

During time of pipe change the gang on the material floor (one foreman and eight laborers) were used on excavation, as follows:

One foreman at 35c—8¾ hrs.....	\$ 2.90
Eight laborers at 22½c—8¾ hrs..	15.75

Total\$18.65

Total labor cost for 20 hrs. at \$4.80.....\$96.00

Total for excavation..... 18.65

Total chargeable to concrete work.....\$77.35

Number of cu. yds. placed.....257 yds.

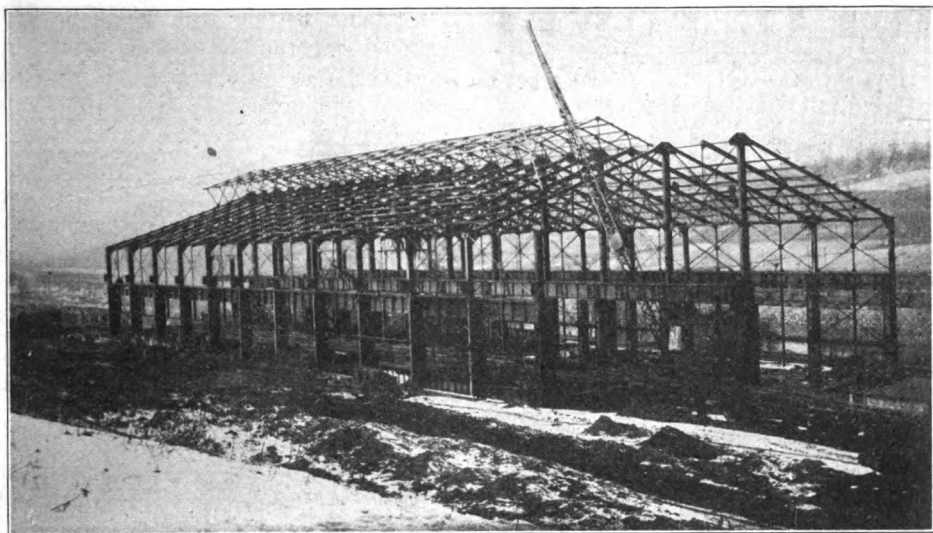
\$77.35, 257 yds., cost per cu. yd.....\$0.30

Because of the revolution of concreting methods brought about by the use of this machine, it is necessary to instruct and advise the user in its operation until he can satisfactorily operate it himself. The manufacturers therefore do not sell

the machines, but lease them. They will be pleased, at all times, to give information as to plant layouts to suit conditions and requirements for any work contemplated.

The water works tunnel, St. Louis, Fruin-Colman Construction Co., contractors, has just been completed. Of the contracts now under progress, the following may be mentioned: C., B. & Q. R. R. tunnel at Armino, Wyo., Mr. Calvert, chief engineer; No. Pac. R. R., three miles of retaining wall for track elevation, Spokane, Wash.; city of Memphis, Tenn., two 16-ft. diameter sewer tunnels. The new intake tunnel at Wilson avenue, Chicago, is one of the contracts they have just closed.

Wherever this machine has been installed its users have themselves been most enthusiastic over its performance. The mixture is perfect, the concrete is exceedingly dense, and the cost is much lower than has ever been possible for concrete work. Further information and prices may be obtained from the Concrete Mixing & Placing Company, 123 W. Madison street, Chicago.



A Riveting Record Broken.

Above is a view taken during the construction of the new Open Hearth Building of the Youngstown Iron & Steel Co., Youngstown, Ohio, the work being done by the Fort Pitt Bridge Co. of Pittsburgh. Special interest in the job lies not only in the fact that No. 80 Boyer Riveting Hammers were used exclusively, but also from the fact that a riveting record was made as evidenced by the following article, which recently appeared in the Cleveland Leader:

Rivet Record Broken.

"Youngstown, O., Feb. 11.—All records for rivet driving in eight hours' work were broken yesterday at the plant of the Youngstown Iron & Steel Company. A crew composed of Albert Stafford, driving, Reese Ramsey, heating, with W. Green and B. Bransfield assisting, placed 2,416 rivets. The former record is said to have been made in Cleveland in 1908."

Hobo—Yes'm, I wunst had a good job managin' a hand laundry, but it failed on me.

Lady—Poor man. How did it happen to fail?

Hobo—She left me and went home to her folks.

The Laconic Turn.

"The official war dispatches," said George Horace Lorimer, the Philadelphia editor, "are too laconic. What a pity our professional correspondents can't go to the front!

"A laconic turn is the last thing to be desired in a war dispatch. A laconic turn is only advantageous in regard to things humorous or odd—like, for example, the remark of the old veteran.

"This old veteran, describing a campaign, said:

"'And that day we were so hungry, by jiminy, we had to eat weeds. Ever eat weeds?'

"'No,' said his audience.

"'Well,' said the veteran laconically, 'I dunno as ye missed much.'"

Needed to Be Explained.

Mrs. Hennessey, who was a late arrival in the neighborhood, was entertaining a neighbor one afternoon, when the latter inquired:

"An' what does your old man do, Mrs. Hennessey?"

"Sure, he's a di'mond cutter."

"Ye don't mane it!"

"Yis; he cuts th' grass off th' baseball grounds."

IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air
and Electrical Appliances

BY THE

IDEAL POWER PUBLISHING CO.

1014 Fisher Building

CHICAGO, U. S. A.

C. I. HENRIKSON

Editor

Vol. 11.

MAY, 1915.

No. 5.

TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year
Other Countries in Postal Union, 50 cents per year

ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our
subscription list.

Removal Notices.

On April 20 the New York office of the Chicago Pneumatic Tool Co. were removed to 52 Vanderbilt avenue, instead of 50 Church street. The new address is at the corner of 45th street and Vanderbilt avenue, directly opposite the Grand Central Terminal. The new telephone number is Murray Hill 8580.

The Boston office of the company has been removed from 191 High street to 185 Pleasant street.

Do You Ever Do Any Circularizing?

If you do, send us \$3.00 for a complete directory of the boiler, tank and stack manufacturers of the United States and Canada. The list is up to date and is authorized by the American Boiler Manufacturers' Association of the United States and Canada.—Editor.

Death of W. H. Traver.

The many friends of Wilber H. Traver were shocked to learn of his death, which took place at Houghton, Mich., on April 15th. His duties as manager of the mining department of the Chicago Pneumatic Tool Company called him out of town frequently and it was on one of these trips that he was taken with pneumonia which developed so rapidly it was impossible to bring him home. Of all

the mining districts with which he kept in touch the iron and copper country of northern Wisconsin and Michigan was nearest and dearest to him and it was there that he passed away.

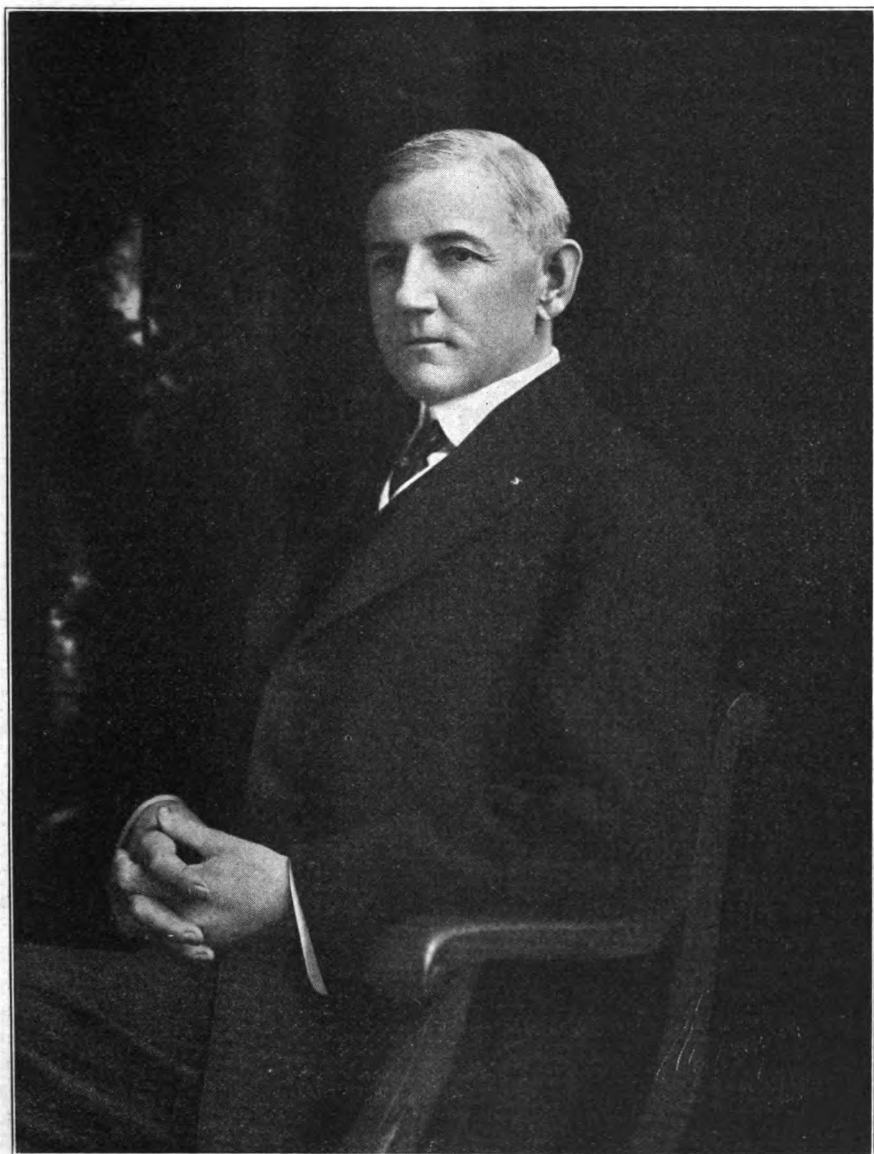
Mr. Traver was born in Michigan fifty-two years ago, but moved to Kirtland, Ohio, while still very young. The mechanical profession appealed to him, at first marine and later railroad work, and in this he made rapid progress, advancing to the position of master mechanic in various shops of the Santa Fe. But "Bill" Traver, as he was familiarly called, had such a knack of making and holding friends that he drifted naturally into the selling end of business and took a position in the sales department of the Rand Drill Company, with which he was connected for a period of fourteen years.

In 1906, shortly after the Rand Drill Company and the Ingersoll-Sergeant Company consolidated their interests and formed the Ingersoll-Rand Company, Mr. Traver cast his lot with the Chicago Pneumatic Tool Company, in whose service he remained until his death.

Mr. Traver's thorough mechanical knowledge and experience, particularly in the field of compressed air machinery, served him well during the many years that he kept in touch with the mining industry, and few men have to their credit as long a list of sales and installations as had "Bill" Traver.

Mr. Traver's club associations were many. He belonged to the St. Louis Railway Club and the Western Railway Club of Chicago, the Elks' lodge No. 447 of Ishpeming; and in the Masonic orders he was affiliated with the Blue Lodge of Jackson, Mich., the Chapter at Ravenswood, the Commandery at Denver and the Shrine at Leavenworth, Kan. He was also a member of the Illinois Athletic Club and of the Lake Superior Mining Institute.

Mr. Traver left a wife and two sons, Delmar R., and Weir H. The funeral services were held at his home, 4339 N.



Wilber H. Traver.
1862—1915.

Hermitage avenue, Ravenswood, Chicago, Saturday afternoon, April 17th, but the final interment was at his old home in Kirkland, Ohio, on the Sunday following, which was attended by a large delegation from Chicago which chartered a

special car for the purpose.

Every unit in the Chicago Pneumatic Tool Company organization feels a personal loss in the death of Mr. Traver and the sincerest heartfelt sympathy is extended to the bereaved family.



Showing Foster's Little Giant Loaded with Large Wooden Tank. See article below.

The Motor Truck in the Retail Lumber, Coal and Contracting Fields—How a Little Giant Meets the Requirements.

A prominent concrete-cement trade journal of Detroit, Mich., recently undertook to present to its subscribers some first hand data on the use of motor trucks in retail lumber, coal and contracting field. One of their letters of inquiry was addressed to the Foster Lumber & Coal Co., Valparaiso, Ind., and with their permission we are quoting from a letter in which they get right down to "brass tacks."

Gentlemen: We regret to find that your inquiry of the 28th ult. as to motor trucks has been mislaid in our office and not answered with more promptness.

We use a Little Giant one-ton truck, manufactured and sold by the Chicago Pneumatic Tool Company of Chicago, Ill., which has been giving us exceptionally good service. While its guaranteed capacity is only one ton, it is very strongly built and we carry nearer two tons than one a good share of the time,

although we do not aim to use it for heavy hauling.

Our primary purpose in buying a truck was to get something to handle light orders quickly. So often we find that a contractor will have a job away on the other side of town for which we have furnished the material and, when he gets about done he finds that he needs a couple of sacks of cement, a few bunches of shingles, or the like, and at that point of the job he wants his material quick. Often it would take a horse and wagon two or three hours to take care of such an order, and in the meantime the workmen are standing idle and the contractor is cussing the service. But with a truck, we can pile on two or three of these orders in different parts of town at a single trip and the truck is back in less than an hour, the work goes on without delay, the contractor is a satisfied customer, and the material is sold at a profit rather than at an actual loss, as was often the case when we had to send a team on a long trip with a small item.



Delivering a Load of Coal with Little Giant Truck Owned by Foster Lumber and Coal Co., Valparaiso, Ind.

We also do a contracting business along with our retail yard, and here the truck is invaluable, especially for country work. Without the truck it was almost impossible for us to make a profit on country work for, if the men drove back and forth, the lost time going and coming consumed all the profit, and where we had to board them the result was the same. Now we handle nicely jobs anywhere within a radius of ten miles. The truck leaves town at 6:30 a. m., has the gang on the job ready for work at 7, comes back to town and does a day's work delivering, and is back at 5 to bring the gang back home. No time is lost and the boys are all kept good natured because they get home as soon as they would if they were working in town.

During the winter we use our truck to very good advantage hauling quarter, half and ton orders of coal, and here again it proves most efficient as a time saver, with small orders. We do not load directly into the truck body, but

use 100-lb. canvas bags. Heretofore, on very cold days we would often get more orders than we could deliver in one day, but since we have used the truck we have not had to pass up a single customer for, when we see the wagons can not make them all, we load on a few bags of coal to run the different customers through the night and the truck has them supplied in very short order, then the wagons complete the order next day. This feature has proved a far more potent trade getter than one would suppose at first thought.

As to cost of operation, mileage considered, the truck is a good deal cheaper than horse-and-wagon delivery, and from a standpoint of service there is absolutely no comparison. For a live, up-to-date lumber dealer, material man or contractor, an auto truck is indispensable—at least, such has been our experience.

Yours very truly,

FOSTER LUMBER & COAL CO.,

Byron Smith.

Feb. 8th, 1915.



Two Views of a Little Giant Truck in the Coal Business at Washington, D. C.

Little Giant Truck in New Range of Sizes.

One of the big mistakes made by auto truck manufacturers and dealers in the early days of the truck business was the rating of truck capacities in terms of tons and half tons instead of employing some sort of phraseology that would be intelligible to the average merchant. The hardship of course falls heaviest now on the builder who makes but one design. The prospective user of a truck is apt to jump at conclusions and decide in his own mind long before he is able or wishes to buy that he wants a truck of a certain rated capacity, when as a matter of fact, if his problems were carefully studied, a lighter or heavier truck would answer his purpose far better and be more economical and satisfactory in the end than the truck he has set his mind to get.

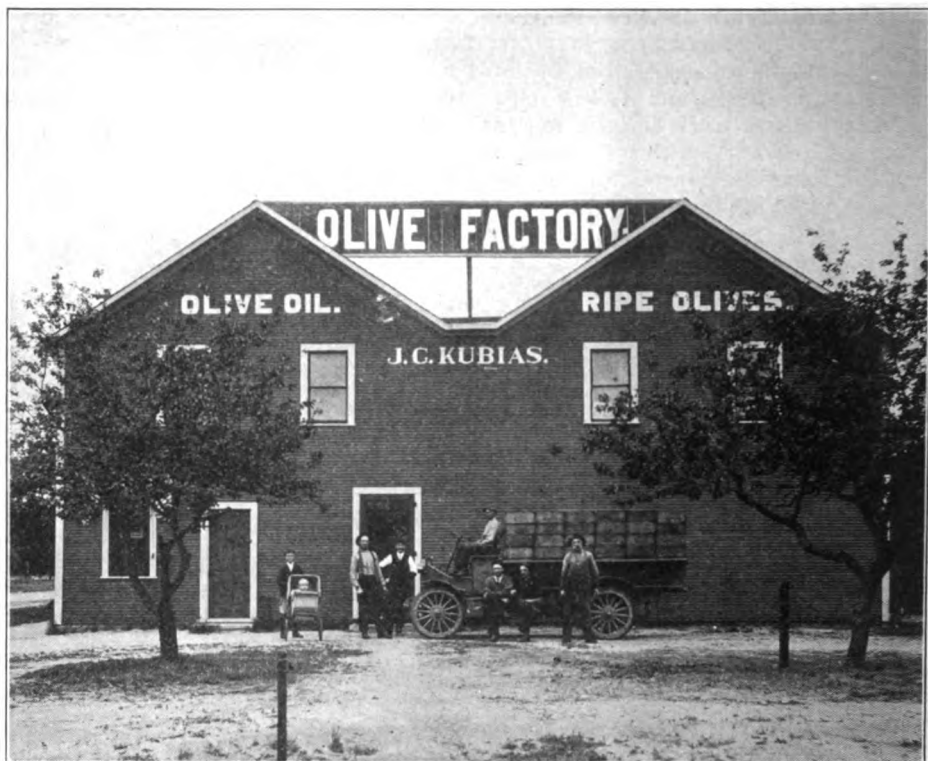
The average customer, when buying a truck of rated capacity, figures his average load as capacity. As a result his truck is overloaded a great deal of the time. At best any piece of machinery, when operated at full capacity, has a limited life of usefulness, whereas if run at three-quarters of its capacity its life may be practically doubled. This does not apply to motor trucks alone, but to any piece of machinery. On the other hand, there are customers who buy a truck with a capacity equal to the maximum load, with the result that for possibly two-thirds of the year they run it at from one-third to two-thirds of its rated capacity. While the truck under these conditions may not receive any abuse and will last much longer, there is naturally greater and some unnecessary overhead expense. As a further illustration of the misuse of the word "capacity," many prospective buyers in looking over and discussing a truck confess it is their understanding that a one-ton truck weighs one ton, etc. These are the problems that a seller of trucks is up against, but the mischief has of course been done; custom has been established, and it is now up to the manufacturer to make the best of it.

The questions of length of hauls, maximum and minimum weight of loads, grades and conditions of roads, all enter into the proper selection of a truck, and when a prospective user presents these conditions in his inquiry, or where it is possible for the dealer or manufacturer to investigate and determine these factors, the selection of a truck of proper capacity is invariably secured.

Horse and wagon delivery has hundreds of years of experience back of it, while auto delivery—radically different in many respects—has but a few years of experience from which to draw its conclusions and base its theories and practices, and many a disgruntled truck user was the victim of poor judgment in the selection of a truck. The burden of this fell upon the manufacturer—and the truck industry has had plenty of work to do to correct these early mistakes and erase their effects on the minds of skeptical prospects. The outcome has been that truck makers—recognizing the varieties of conditions to be met—have been compelled to increase their range of capacities and designs. The maker of a truck of only one capacity was up against the same problem that a clothier would be if he carried suits of but one size in his stock. Both fat and lean would wear the same size of garment and the misfits would be many and the results possibly disastrous.

When the Chicago Pneumatic Tool Co. entered into the business of truck making all efforts and energies were expended on the production of a single design of truck, with the result that mechanical details were thoroughly and carefully worked out to their logical conclusions. The demand for trucks of lighter and heavier weight capacity made it quite necessary to design the Little Giant to meet all these demands, and a range of four sizes has already been brought out, known as $\frac{3}{4}$, 1, $1\frac{1}{2}$ and 2-ton capacities.

But as previously stated these sizes are to a great extent misnomers, as few purchasers know how to use them in-



This is the Olive Factory owned by J. C. Kubias, Redlands, Cal., with his Little Giant Truck in foreground. Mr. Kubias is enthusiastic over his Little Giant, and although we have published many articles giving details of his experiences with the truck, this is our first opportunity to print a picture of his establishment.

telligently, and the proper thing for a prospective buyer to do is to go to a manufacturer of reliability, state his conditions and get a truck that the manufacturer recommends. In his effort to make a satisfied customer he will prescribe the best truck that his judgment and experience dictate.

Modern Grammar.

A young lad, just returned from boarding school, upon being asked by "dad" how he stood in grammar at the end of the term, came back with something like this:

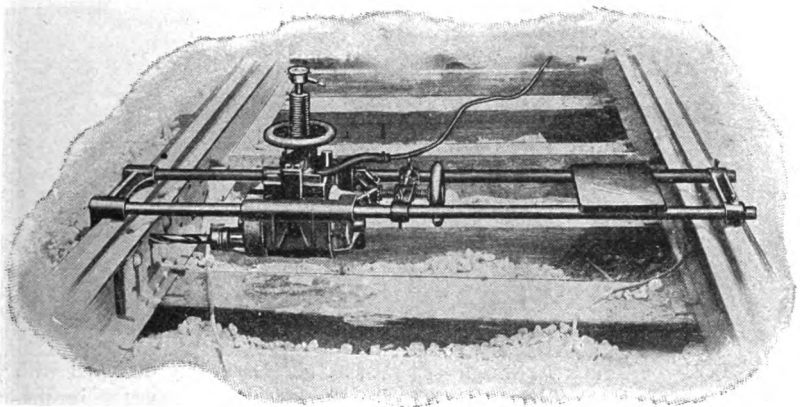
"Say, dad, take it from me, grammar was my long suit. On the start I was up against it hard. Couldn't get it through my noodle. Fell down every time I went to class. Finally I says to

myself, look here, old kid, it's up to you. You've got to cut out the funny business and take a brace or you'll see your finish, the surest thing you know. Well, I studied, believe me. And say, when it come to the final exams, did I lose out? Not on your life. I was right there with bells on. There was certainly some class to the way I answered those quizzes. A cold mark of ninety-five when it was all over. Not so worse, eh? Can you beat it? How I did it, I don't know. You can search me. But anyhow it's going some, eh, dad? None of 'em's got anything on me when it comes to grammar, that's a cinch."

The old gent managed to gasp, "Get the hook."

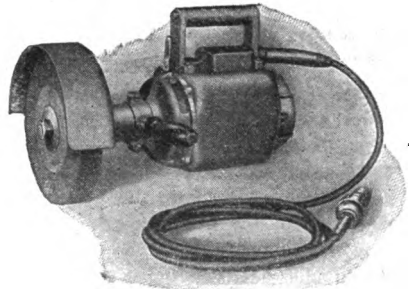
According to statistics, there are more men with blockheads than wooden legs.

Apply Electricity To Your Track Problems by using Duntley Electric Tools

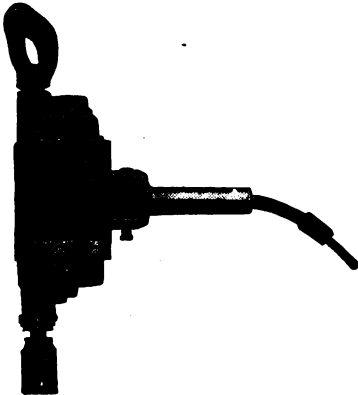


Duntley Electric Track Drill

Duntley Electric Tools with their wide range of adaptability are establishing new standards for economical construction and maintenance on track work and in the shop. It will be worth your while to investigate. These tools are now used by hundreds of street and interurban railways.



No. 3 BP Grinder



"DUNTLEY" Electric Drills

for all purposes, operating interchangeably on direct or alternating current.

Attach to ordinary lamp socket.

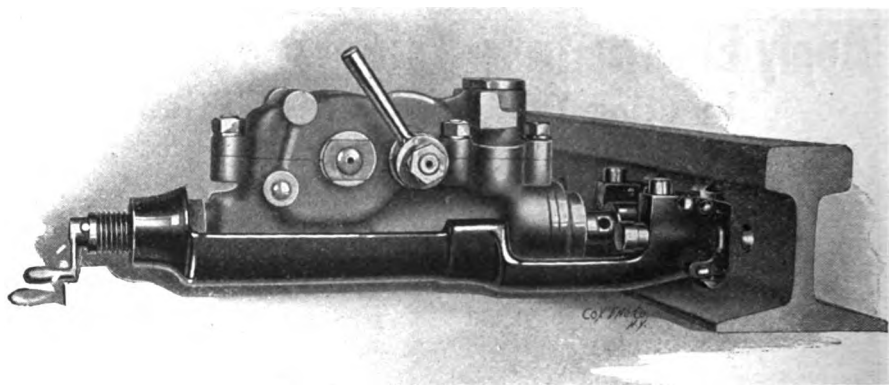
Write for Bulletins and Prices

CHICAGO PNEUMATIC TOOL COMPANY

1014 Fisher Building
CHICAGO

BRANCHES EVERYWHERE

52 Vanderbilt Ave.
NEW YORK



The "Wedglok" Drill.

A New Tool for Track Drilling.

In drilling track for bonds or joint holes where the traffic is heavy and the trains frequent, it is often desirable to use a tool which does not have to be lifted off the track. The "Wedglok System" described herewith was devised to take care of this condition. The Wedglok drill is made in two types—the power driven drill and the hand drill, which are similar in many respects, particularly relative to the fastening mechanism, frame and bits.

The power driven drill can be operated either by an electric drill motor or an air tool. It is attached directly to the rail and made secure by striking the horizontal driving wedges with a hammer. The driving spindle is supported by a rigid frame and held in alignment by means of long bearings. The drilling mechanism and bit are moved to contact with the rail by means of the small crank in the rear and the drilling spindle which is rotated by the power tool is automatically fed by a cam, controlled by an automatic friction feed. This feed can be increased or decreased to suit the varying conditions by means of the small lever shown on the side of the drill. One revolution of the feeding cam automatically feeds the bit through the rail and when the revolution is completed a powerful spring throws the drill spindle automatically back to position.

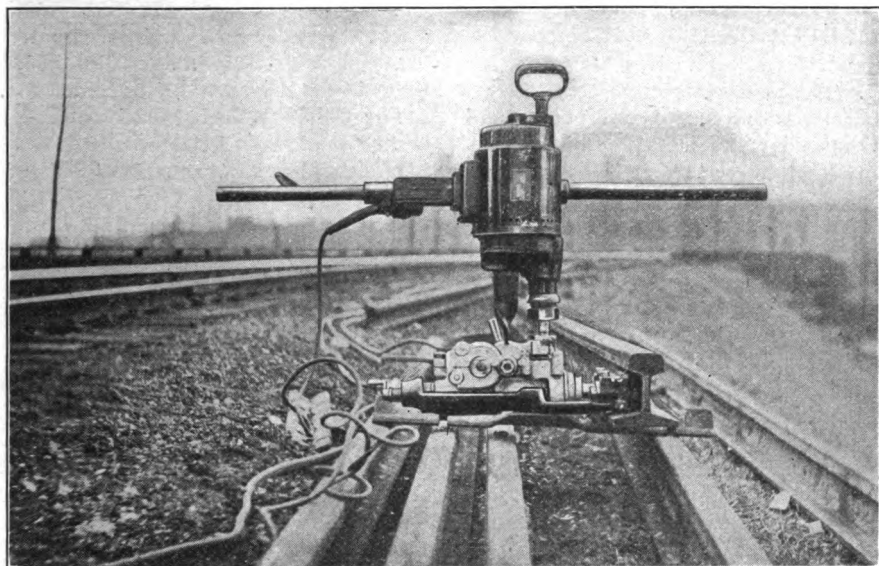
The bit is specially designed with a conical tang which is inserted in the conical spindle socket. It is driven by two lips on the spindle at a point where the greatest mass of metal lies. The shortness of the bit and method of holding makes possible the use of a very hard bit without breaking. The drill frame can be removed from the rail by striking the vertical retracting wedges with a hammer, thus withdrawing the clamping points.

The manufacturers recommend the use of two power driven track drills with one electric or pneumatic driving motor. In this manner, one man can set and remove the drills and the other man operate the electric tool.

It is claimed by the manufacturers that straight round true holes can be drilled dry in hard rails at a very high rate of speed.

It will be readily seen that the drill does not in any way obstruct the track and that by simply removing the electric or pneumatic motor from the Morse taper shank which projects vertically, there will be no obstruction to the passage of trains. The manufacturers are also having ratchet hand drills made on the same principle for track work.

Further information regarding the Wedglok system may be obtained from the Prince-Groff Co., 50 Church street, New York.



Two men, two "Wedglok" Drills and one Duntley Electric Drill No. 3 drilled 304 one-inch holes in 100-lb. Bethlehem Steel Open Hearth Rail in 9½ hours. Only six bits were dulled, none broken. The rails were lying as they were thrown from the cars.

Drill Chips.

Just as Cleveland twist drills hold a unique place in mechanical appliances so does Drill Chips, the company's monthly publication, hold a place of its own among trade publications. The editor is a philosophic wag with a double-cylindered imagination and a spiral fancy that revels in apt illustrations and fine similes. He is a poet in disguise. His pen is as sharp as a twist drill. He never wobbles, but goes straight through, the cutting edge of his polished pen leaving a smooth impression. He is one of the few writers that can mix complex machinery with profound philosophy, and as he untwists his flowing periods he never grows dull. Like the Cleveland twist drill he would be hard to beat.

A German paper contains the following unique advertisement: "Any person who can prove that my tapioca contains anything injurious to health will have three boxes of it sent to him free of charge."

Sh! Don't Wake Him Up.

I wish I was a rock a-sittin' on a hill.
A-doin' nothin' all day long
But just a-sittin' still.
I wouldn't eat,
I wouldn't sleep,
I wouldn't even wash;
I'd just sit there a thousand years
And rest myself, By-Gosh!
(From February Ideal Power.)

Just one more "crack" at that fellow who has no more ambition than the rock which he mentions in the little verse in the February number of "Ideal Power": That man who wished he was a rock A-sittin' on a hill,
Would be a blessing to mankind
If he could keep that still.
He couldn't cuss,
He couldn't knock,
He couldn't take up room
That's needed by the man who tries
To make this old world "boom."
—Enthusiastic reader of "Ideal Power."

Soldco.

SOLDCO or BELT LIFE means exactly what it says. It gives life to leather belts. The man who will appreciate this is he who is responsible for profits and economies in manufacturing institutions of any kind where leather belts are used. SOLDCO penetrates the fibres of new and old belts, making the leather soft and pliable, causing every inch of the belt to hug the pulley and resulting in at least 20 per cent more transmission than in belts not similarly treated.

What is SOLDCO? Its principle ingredient is a product used in the manufacture of Russian leather, which for years has been a secret possessed by the carriers of that country. By currying with SOLDCO it imparts to leather that lasting quality, subtleness and odor that makes Russian leather so famous and expensive. SOLDCO is non-volatile, non-inflammable, non-combustible. It is guaranteed to be non-acid and keeps liquid under all atmospheric conditions. It leaves the surface of belts dry and non-adhesive and is therefore highly recommended for belts running under extreme dust conditions. It makes leather impervious to moisture or chemical fumes. It waterproofs it after the first application and it is easy to apply.

It is a well known fact that in changing hide into leather, tanners remove all the natural oils and fats, leaving the bare fibre. SOLDCO penetrates these fibres, lubricates and protects them and imparts to the leather the qualities which the processes of tanning removed.

In addition to its use as BELT LIFE, SOLDCO is splendid for treating harness and saddlery and for water-proofing, softening and preserving the leather of boots and shoes. The leather of automobile clutches when treated with SOLDCO is given renewed life and keeps soft and pliable and thoroughly effective as a clutch for from 60 to 90 days after each application. It is also excellent for removing dust stains, finger marks, grease and dirt from the leather trimmings of coaches and automobiles and when applied to steel or iron, prevents rust. The same remarkable quali-

ties it possesses in the treatment of leather are demonstrated in the treatment of hoofs of horses and keeping them in natural and healthy condition.

The Griffin Wheel Co. of Chicago recently made some laboratory tests of SOLDCO, brief extracts from which follow:

"Laboratory tests were first made to determine if these dressings contained substances which are considered to be more or less injurious to leather such as rosin, mineral oil, acid, soap, etc.

"In this test we found SOLDCO to be the only dressing free from one or more of the substances mentioned. SOLDCO appears to be a fish oil. It readily penetrates leather and keeps it pliable and at the same time does not produce an oily surface on the belt unless used in too great quantities. We also found that there was very little accumulation of dirt on belts treated with SOLDCO, whereas the rosin dressings gathered dust readily and gummed both on the belt and the pulley.

"To further determine the efficiency of SOLDCO, tests were made on belts operating under different conditions, one in a dusty place, one in a hot place and one in a cool and clean place, and it was found to stand up equally well under all conditions mentioned.

"On one of our belts, which has required a daily treatment of belt dressing and on which a total of one pound per month has been used, we found that one application of $\frac{1}{4}$ pound of SOLDCO put the belt in such a shape that it was not necessary to make a further application during a month's period. At the same time the average slippage on this belt was reduced from 4 per cent to 2.02 per cent.

"Another test was made with SOLDCO in our compressor room. In this test a new 16-inch by 42-foot belt was dressed and put in service May 13th. The total area of this belt was 112 square feet and to properly treat it (2 coats) required two pounds of SOLDCO. To date this belt has required no further treatment, and, while it is true that our compressor belts operate under

conditions which necessitate the use of but little dressing of any kind, still the SOLDCO has kept this belt pliable and in excellent condition and has been of benefit."

For further information regarding SOLDCO Belt Life, those interested in it are invited to correspond with The Chicago Pneumatic Tool Company, Fisher Bldg., Chicago.

Our New York correspondent asks us if we ever stopped to think:

That you cannot get into any saloon in New York on Sunday?

That they are all too crowded?

That the wind is tempered to the shorn lamb?

That it always seems mighty ill-tempered, if you happen to be the lamb?

That if you want to go downtown the worst way, you should take the subway?

That it is annoying to be taking a bath when Opportunity knocks at the door?

That the marriage rite is about the only right we grant to women?

That faint heart never won fair lady?

That many men wish they had been faint-hearted?

That great oaks from little acorns grow?

That if you don't believe it, you can plant one and stick around for a couple of hundred years?

A Costly Possession.

"Who gave you that black eye?" asked the fond mother sternly.

"Nobody gave it to me," answered her young hopeful. "I had to fight for it."—Exchange.

These Men Want Jobs.

Pneumatic Tool repair man with sixteen years' experience wants steady job where good work will be appreciated. Address Ad-2, care Ideal Power.

Air Tool man with railroad experience desires to make a change. Could take entire charge of pneumatic tool department. Address Ad-3, care Ideal Power.

A foreman boiler maker with long and creditable experience, with thorough knowledge of pneumatic tools and with best of references, wants position with some railroad. Address Ad-4, care Ideal Power.

A superintendent of steel construction, with twenty-two years' experience, wants to connect up with some reliable concern. Can furnish best of references. Address Ad-5, care Ideal Power.

A first-class boiler inspector of long experience and excellent habits and character desires a position. Understands pneumatic tools thoroughly. Address Ad-6, care Ideal Power.

A pneumatic tool man with nine years' experience in one of the largest railroad shops of the country wishes to locate in the northwest. Address Ad-7, care Ideal Power.

Getting a Raise.

A year ago a manufacturer hired a boy. For months there was nothing noticeable about the boy except that he never took his eyes off the machine he was running. A few weeks ago the manufacturer looked up from his work to see the boy standing beside his desk.

"What do you want?" he asked.

"Want me pay raised."

"What are you getting?"

"T'ree dollars a week."

"Well, how much do you think you are worth?"

"Four dollars."

"You think so, do you?"

"Yes, sir, an' I've been t'inkin' so for t'ree weeks, but I've been so blamed busy I ain't had time to speak to you about it."

The boy got the raise.



Real art is to make it pay.

Excessive liabilities make marriage a failure.

True blue is a term, that isn't applicable to good milk.

The luxuries of life are the things one can dispense with.

A trial of adversity often makes a change of venue desirable.

Good digestion is needed when a fellow has to eat his own words.

Many a bright woman takes dancing lessons after she reaches 40.

A village editor tells us that hard cider is the spirit of the country press.

Yet a man hardly ever strikes a happy vein in the vicinity of his funny bone.

After a man has been married a year or two he looks as neglected as an old grave.

If a mule and a horse are hitched to the same wagon the mule looks as meek as any married man.

It should be a penal offense to grind out "Coming Through the Rye" on a hand organ in a prohibition precinct.

Many a young man who starts out in life under the impression that he is a

born leader, gets married and retires to the rear of the procession.

Mirrors are the poorest kind of flatterers.

Beware of the man whom children and dogs don't like.

A wise man guesses a woman's age ten years too young.

When she reads a historical novel she skips through the historic part.

Marriage is the monotony that relieves the excitement of life.

Dampness caused by a woman's tears is always oppressive.

Some men are pleasant to talk to and disagreeable to listen to.

Little things console us because most of our afflictions are little ones.

It is all right to keep smiling if you have anything to smile about.

The absent may be at fault, but those present always have good excuses.

The man who makes the best of everything should have no trouble in disposing of his goods.

Every doctor in a small town is fully convinced that he would have become world famous had he located in a city.

THE CHICAGO PNEUMATIC TOOL COMPANY

MANUFACTURE THE FOLLOWING
PNEUMATIC TOOLS, APPLIANCES, ETC.

After Coolers
Air Compressors
Air Economizers
Air Forge, Chicago
Air Motors
Air Receivers
Air Jacks
Airoilene
Airoilene Grease
Angle Gears, Little Giant
Angle Gears, Boyer
Annealing Machines
Armour Scaling Machines
Automatic Oiling Devices
Bell Ringers, Little Giant
Blow-off Cocks, Little Giant
Chucks, Drill
Chucks, Expanding
Commercial Car, Cranes
Drift Bolt Drivers
Drills, Boyer
Drills, Keller
Drills, Little Giant
Drills, Rock
Drilling Stands
Elevators
Electric Drills, Duntley
Electric Grinders, Duntley
Engineers' Valves
Flue Cutters, Chicago
Flue Rollers, and Ex-
panders, Little Giant
Gas Engines
Gasoline Driven Com-
pressors
Gasoline Engines

Grinders, Portable Electric
Hammers, Riveting
Hammers, Chipping and
Calking
Hammers, Stone
Hoists, Duntley Electric
Hoists, Pneumatic Geared
Hoists, Straight Lift
Holders-on
Hose, Special High Grade
Hose Clamp Tool
Hose Couplings (Universal)
Inter-Coolers
Magnetic Old Man
Oil Driven Compressors
Oil Engines
Painting Machines
Pipe Bending Machines
Pneumatic Saws
Pneumatic Plate
Straighteners
Railway Motor Section Cars
Reamers
Reheaters
Rivet Busters
Riveters, Jamb
Riveters, Yoke
Riveters, Compression
Sand Rammers
Sand Sifters
Speed Recorders
Staybolt Chucks
Stone Dressers
Staybolt Nippers
Vacuum Pumps
Winches, Portable

The GUARANTEE That Goes With an Auto Delivery Truck Is No Better Than the Responsibility of the Manufacturers



Two Little Giant Trucks, Loaded to the Guards in the Service of the
Giant Auto Express Co., Cleveland, O.

LITTLE GIANT Trucks have the backing of a \$11,000,000.00 concern, able financially to support its claims.

LITTLE GIANT Trucks are built and sold to support the reputation of a concern that has, in a little more than twenty years, won the good will of nearly 25,000 customers.

LITTLE GIANT Trucks are giants in power and endurance and in a wide range of sizes, $\frac{3}{4}$ -1-1 $\frac{1}{2}$ -2 tons capacity, and all styles of bodies—are invading every field and making good.

TELL US YOUR DELIVERY TROUBLES
We have an interesting proposition for you

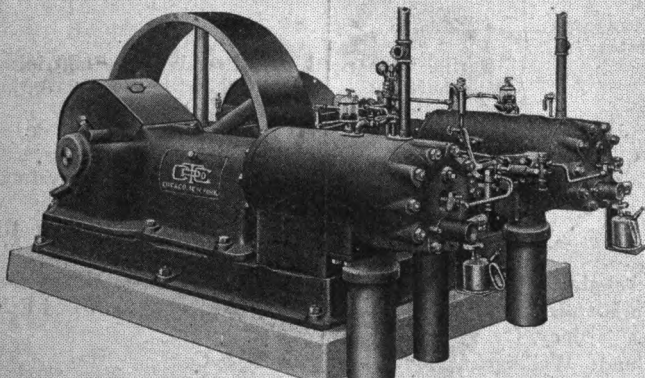
Chicago Pneumatic Tool Co.

Chicago
1014 Fisher Bldg.

New York
52 Vanderbilt Av.

BRANCHES EVERYWHERE

IDEAL POWER



Class A-DO Giant Fuel Oil Engine

PUBLISHED MONTHLY BY
Chicago Pneumatic Tool Company
 CHICAGO NEW YORK

Chicago Pneumatic Tool Company

Chicago Office, Fisher Bldg.

Eastern Office, No. 52 Vanderbilt Ave.

CHICAGO

NEW YORK

BRANCH OFFICES

Boston: 185 Pleasant Street
 Birmingham: 834 Brown-Marx Bldg.
 Buffalo: 503 Ellicott Square Bldg.
 Cincinnati: 1008 Mercantile Library Bdg.
 Cleveland: 1241 E. 49th St.
 Cleveland: 2122 Euclid Ave.
 Detroit: 2nd Ave. and Amsterdam St.
 El Paso: 303 San Francisco St.
 Erie, Pennsylvania
 Franklin, Pennsylvania
 Los Angeles: 241-243 S. Los Angeles St.
 Louisville, Ky.: 31 Todd Bldg.
 Marquette, Mich.: Lake Shore Eng. Wks.
 Philadelphia: 1740-42 Market St.
 Pittsburgh: 10 and 12 Wood St.
 Portland, Ore.: 46-48 Front St.
 Richmond, Va.: 1004 Mutual Bldg.
 Salt Lake City: 117-119 W. 2nd South St.
 Seattle: 122 King St.
 Spokane: Cor. R. R. and Wall St.
 St. Louis: 813-19 Hempstead St.
 St. Paul: Pioneer Bldg.
 San Francisco: 71 First St.

FOREIGN

Canada: } Montreal, **Canadian Pneumatic Tool Co.**
 } The Holden Co., Ltd., Montreal, Toronto, Winnipeg.
 British Columbia: Vancouver, Holden Co., Ltd., 429 Pendar St.
 Mexico: Mexico City, The General Supply Co., Av. Isabel La Catolica, No. 51.
 Northern Mexico: (Sonora and Chihuahua), Don A. Carpenter & Co., El Paso, Texas.
 Great Britain: } London, **The Consolidated Pneumatic Tool Company**
 Spain: } Ltd., 9, Bridge Street, Westminster, S. W.
 Portugal: }
 France: Paris, Anciens Etablissement. Glaenger & Perreaud 18-20 Faubourg du Temple.
 Belgium: Brussels, The Consolidated Pneumatic Tool Co., Ltd., 22 Chaussee de Forest, Porte de Hal.
 Italy: Milan, The Consolidated Pneumatic Tool Co., Ltd., via A. Cappellini 7.
 Germany:
 Austria Hungary: }
 Balkan States: }
 Norway: } Berlin, **Internationale Pressluft & Elektrizitäts-Gesellschaft** m. b. H. Berlin C. 54, Weinmeisterhof, Weinmeisterstrasse No. 14.
 Sweden: }
 Holland: }
 Switzerland: }
 Denmark: }
 Russia: } Petrograd: Phoenix Engineering Works Co., Ltd., Polustrovskaya. Quay No. 39.
 India: } Bombay, **Consolidated Pneumatic Tool Co., Ltd.**, Rampart Row, Fort.
 } Calcutta, The Consolidated Pneumatic Tool Co., Ltd., 8 Lal Bazar St.
 Japanese Empire: Tokyo, Osaka, Seoul, Dairen, The F. W. Horne Co.
 Philippine Islands: Manila, Frank L. Strong Machinery Co., 64-68 Echague.
 Australia: Sydney, Henry W. Peabody & Co.
 New Zealand: Wellington, Henry W. Peabody & Co.
 South America: Buenos Aires, Argentina, Evans, Thornton & Co.
 South Africa: } Johannesburg, The Consolidated Pneumatic Tool Co., Ltd., 3 and 9 Cullinan Buildings.

BULLETIN DIRECTORY

Requests for these bulletins should be directed to our Chicago or New York offices or to our nearest branch as shown on inside front cover.

PNEUMATIC TOOLS

- 121...Pneumatic Rammers and Foundry Appliances.
- 124...Pneumatic Riveting, Chipping, Calking and Stone Hammers.
- 125...Pneumatic Yoke, Jam and Shell Riveters, Holders-on, Drift Bolt Drivers, Rivet Busters.
- 126...Compression Riveters.
- 127...Pneumatic Drills, Corner Drills, Reamers, Wood Borers, Flue Rolling and Tapping Machinery and Grinders.
- 128...Miscellaneous equipment for Pneumatic Drills, viz: Chucks, Twist Drills, Reamers, Augers, Flue Cutters, Flue Expanders, Angle Gears.
- 129...Hose, Hose Couplings and Hose Clamp Tools.
- 130...Lubrication of Pneumatic Tools.
- 131...Miscellaneous Tools, viz: Pipe Benders, Air Forge, Bolt Nipper, Drilling Stands, Blow-off Cocks, Bell Ringers, Drill Repair Vises, Painting Machines.
- 132...Pneumatic Motors and Pneumatic Geared Hoists.
- 133...Cylinder Air Hoists and Jacks.

ELECTRIC TOOLS

- E-22...Heavy Duty Electric Drills, Alternating Current.
- E-25...Electric Hoists.
- E-31...Duntley Electric Drilling Stands.
- E-32...Duntley Track Drills.
- E-34...Duntley Electric Hammer Drill.
- E-35...Duntley Universal Electric Drills.
- E-36...Duntley Electric Grinders.

AIR COMPRESSORS AND FUEL OIL ENGINES

- 34-A...Class "G" Steam Driven "Chicago Pneumatic" Compressors.
- 34-B... "Chicago Pneumatic" Power Driven Compressors.
- 34-C... "Chicago Pneumatic" Gasoline and Fuel Oil Engine Driven Compressors.
- 34-D... "Chicago Pneumatic" Corliss Compressors, Steam Driven.
- 34-F...Design and Construction Class "G" "Chicago Pneumatic" Compressors.
- 34-G...Air Receivers, Aftercoolers, Reheaters, etc.

- 34-H...General Instructions for Installing and Operating "Chicago Pneumatic" Compressors.
- 34-K...Class N-SO and N-SG Fuel Oil and Gas Driven Compressors.
- 34-L...General Pneumatic Engineering Information.
- 34-M...Class "O" "Chicago Pneumatic" Steam and Power Driven Compressors.
- 34-N...Class N-SS and N-SB Single Enclosed Compressors.
- 34-O...Instructions for the Installation and Care of "Chicago Pneumatic" Gasoline Driven Air Compressors.
- 34-P...Class M-CB and M-CE New Enclosed Type Self-Oiling "Chicago Pneumatic" Power Driven Compressors.
- 34-R...Class L-SS and L-SB New Enclosed Type Self-Oiling "Chicago Pneumatic" Compressors.
- 34-S...Small Power Driven Compressors.
- 34-T...Class "M" Corliss Enclosed Type Self-Oiling Four Valve "Chicago Pneumatic" Steam Driven Compressors.
- 34-U...Instructions for Installing and Operating Class N-SO Fuel Oil Compressors.
- 34-W...Class A-O Fuel Oil Engines.
- 34-X...Class A-G Gas and Gasoline Engines.

ROCK DRILLS AND HAND DRILLS

- 148...Chicago Valveless Hand Drills.
- 149...Chicago Portable Mine Hoist.
- 150...Chicago Coal Drills.
- 151...Chicago Slogger Rock Drills.
- 152...Chicago Gatling Drills.
- 153...Chicago Sinkers.
- 154...Chicago Stopper.
- 172...Chicago Plug and Feather Drill.

LITTLE GIANT TRUCK

- 211...Specifications on 1 and 1½ ton Little Giant Truck.
- 190...Put Your Ear to the Ground and Listen.

ROCKFORD and MISCELLANEOUS

- 42...Boyer Speed Recorder.
- 43...Rockford Railway Motor Car.
- 117...Lubrication of Rockford Cars.
- 119...Operation of Rockford Cars.
- 166...Boyer Speed Recorder with Clock Attachment.

CHICAGO PNEUMATIC TOOL CO.

1014 Fisher Bldg., CHICAGO

Branches Everywhere

52 Vanderbilt Ave., NEW YORK

CONVENTION DATES.

June 9-11, 1915—American Railway Master Mechanics Ass'n at Atlantic City, N. J.
 June 14-16, 1915—Master Car Builders' Ass'n at Atlantic City, N. J.
 June 22-26, 1915—American Society for Testing Material at Hotel Traymore, Atlantic City, N. J.
 July 8-9, 1915—New England Ass'n of Commercial Engineers at Holyoke, Mass.
 July 14-17, 1915—International Railway General Foremen's Ass'n at Sherman House, Chicago.
 July 19-21, 1915—American Railway Tool Foremen's Ass'n at Hotel Sherman, Chicago.
 Aug. 17, 1915—International Railroad Master Blacksmiths' Ass'n at Philadelphia.
 Sept. 14-16, 1915—Roadmasters' and Maintenance of Way Ass'n at Chicago.
 Sept. 14-17, 1915—Railway Signal Ass'n at Salt Lake City, Utah.
 October, 1915—American Electric Railway Ass'n at San Francisco.
 October, 1915—American Electric Railway Manufacturers' Ass'n at San Francisco.
 October 19-21, 1915—American Railway Bridge and Building Ass'n at Detroit, Mich.
 Dec. 7-10, 1915—American Society of Mechanical Engineers at New York.

ENGINEERING SOCIETIES, ETC.

American Association of Railroad Superintendents—Secretary, E. H. Harman, St. Louis, Mo.
 American Concrete Institute—Secretary, Edw. E. Krauss, Harrison Bldg., Philadelphia, Pa.
 American Electric Railway Engineering Association—Secretary-Treasurer, E. B. Burritt, 29 W. 39th St., New York, N. Y.
 American Highway Association—Executive Secretary, I. S. Pennybacker, Colorado Bldg., Washington, D. C.
 American Institute of Electrical Engineers—President, Paul M. Lincoln, care of W. E. & M. Co., Pittsburgh, Pa.; Secretary, F. L. Hutchinson, 33 W. 39th St., New York.
 American Institute of Mining Engineers—Secretary, Bradley Stoughton, 29 W. 39th St., New York City.
 American Mining Congress—Secretary, J. F. Callbreath, Jr., 1021 Munsey Bldg., Washington, D. C.
 American Order of Steam Engineers—Supreme Chief Engineer, J. W. Parent, Philadelphia, Pa.; Supreme Corresponding Engineer, Edw. A. Reboul, 1110 Earl St., Philadelphia, Pa.
 American Railway Engineering Association—Secretary, E. H. Fritch, 1011 Karpen Bldg., Chicago, Ill.
 American Road Builders' Association—Secretary, E. L. Powers, 150 Nassau St., New York.
 American Society of Civil Engineers—Secretary, Chas. Warren Hunt, 220 W. 57th St., New York City.
 American Society of Engineering Contractors—Secretary, J. R. Wemlinger, 11 Broadway, New York City. Meetings: Second Thursday every month.
 American Society of Heating and Ventilating Engineers—Secretary, J. J. Blackmore, 29 W. 39th St., New York City.
 American Society of Mechanical Engineers—Secretary, Calvin W. Rice, 29 W. 39th St., New York City.
 American Society of Naval Engineers—Secretary-Treasurer, Lieut. A. T. Church, U. S. N., Navy Department, Washington, D. C.
 American Water Works Association—Secretary, J. M. Diven, 47 State St., Troy, N. Y.
 Association of Civil Engineers, Cornell University—President, A. F. Williams, Ithaca, N. Y.; Secretary, A. S. Patrick, Ithaca, N. Y.
 Association of Engineering Societies—Chairman Board of Managers, John W. Woermann, 428 Custom House, St. Louis, Mo.; Secretary, Joseph W. Peters, 3817 Olive St., St. Louis, Mo.

Association of Railway Electrical Engineers—Secretary, J. A. Andreucetti, C. & N. W. Ry. Co., Chicago, Ill.
 Boston Society of Civil Engineers—Secretary, S. Everett Tinkham, 715 Tremont Temple, Boston, Mass.
 Canadian Society of Civil Engineers—Secretary, Clement H. McLeod, 176 Mansfield St., Montreal, Can.
 Canadian Railway Club—Secretary, James Powell, Grand Trunk Ry., Montreal, Que.
 Central Railway Club—Secretary, H. D. Vought, 95 Liberty St., New York.
 Civil Engineers' Society of St. Paul—Secretary, Edw. J. Dugan, Room 7, Old State Capitol Bldg., St. Paul, Minn.
 Cleveland Engineering Society—Secretary, David Gaehr, Chamber of Commerce Bldg., Cleveland, Ohio.
 Connecticut Society of Civil Engineers—President, Geo. K. Crandall, New London, Conn.; Secretary-Treasurer, J. Frederick Jackson, Box 1304, New Haven, Conn.
 Detroit Engineering Society—Secretary-Treasurer, Frederick H. Mason, 614 Moffat Bldg., Detroit, Mich.
 Engineering Association of the South—Secretary-Treasurer, J. C. Evans, Nashville, Tenn., Carnegie Library.
 Engineers' Club of Cincinnati—Secretary, E. A. Gast, P. O. Box 333, Cincinnati, Ohio.
 Engineers' Club of Minneapolis—President, L. S. Gillette, 74 Chamber of Commerce, Minneapolis, Minn.; Secretary, Louis Clousing, 2411 Oakland Ave., Minneapolis.
 Engineers' Club of Philadelphia—Secretary, H. L. McMillan, 1317 Spruce St., Philadelphia, Pa.
 Engineers' Club of St. Louis—Secretary, W. W. Horner, 5203 Maple Ave., St. Louis, Mo.
 Engineering Society of Purdue University, Lafayette, Ind.—Secretary, C. B. Penrod, 123 State St., W. Lafayette, Ind.
 Engineering Society of Buffalo—President, David Bell; Secretary, John Younger, 27 Horton Pl., Buffalo, N. Y.
 Engineers' Society of Pennsylvania—Secretary, E. R. Dasher, 31 So. Front St., Harrisburg, Pa.
 Engineers' Society of Northeastern Pennsylvania—Secretary, A. D. Blackinton, Scranton, Pa.
 Engineers' Society of Western Pennsylvania—Secretary, Elmer K. Hiles, 2511 Oliver Bldg., Pittsburgh, Pa.
 Illinois Society of Engineers and Surveyors—Secretary, E. E. R. Tratman, Wheaton, Ill.
 Indiana Engineering Society—Secretary, Chas. Brossmann, Indianapolis, Ind.
 International Railway Congress Association—President (of the International Commission), W. Toudelier, 11 Rue de Louvain, Brussels, Belgium; Secretary, General L. Weissenbruch, same address.
 Iowa Engineering Society—Secretary-Treasurer, Prof. J. H. Dunlap, Iowa City, Iowa.
 Lake Superior Mining Institute—Secretary, A. J. Yungbluth, Ishpeming, Mich.
 Louisiana Engineering Society—President, W. H. Williams; Secretary, W. T. Hogg, State Museum Bldg., New Orleans, La.
 Michigan Engineering Society—President, Delmar E. Teed, Cadillac, Mich.; Secretary, Samuel J. Hoexter, Ann Arbor, Mich.
 Montana Society of Engineers—President, Reno H. Salen, Butte, Mont.; Secretary, Clinton H. Moore, Butte, Mont.
 New England Association of Commercial Engineers—Secretary, Lewis L. Warren, 308 Equitable Bldg., Boston, Mass.
 New England R. R. Club—Secretary, W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass.
 New York Railroad Club—Secretary, Harry D. Vought, 95 Liberty St., New York, N. Y.
 Ohio Engineering Society—President, C. E. Sherman, Columbus, O.; Secretary, D. W. Seitz, Columbus, O.
 Ohio Society of Mechanical, Electrical and Steam Engineers—Secretary-Treasurer, Frank F. Sanborn, Ohio State University, Columbus, O.

Railway Club of Pittsburgh—Secretary, J. B. Anderson, Room 207, Penn. R. R. Station, Pittsburgh, Pa.

Richmond Railway Club—Secretary, F. O. Robinson, C. & O. R. R., Richmond, Va.

Rochester Engineering Society of Rochester—Secretary-Treasurer, Wm. F. Devendorf, 350 East Ave., Rochester, N. Y.

St. Louis Railroad Club—Secretary, B. W. Fraenthal, Union Station, St. Louis, Mo.

Southern & Southwestern Railway Club—Secretary, A. J. Merrill, Grant Bldg., Atlanta, Ga.

Toledo Society of Engineers—President, L. M. Gram, 1047 Spitzer Bldg., Toledo, O.; Secretary, L. T. Owen, 1047 Spitzer Bldg., Toledo, O. Regular meeting, second Friday in each month.

Utah Society of Engineers—Secretary, Frank W. Moore, 1111 Newhouse Bldg., Salt Lake City, Utah. Third Friday of each month, except July and August.

Vermont Society of Engineers—Secretary, Geo. A. Reed, Barre, Vt.

Western Railway Club—Secretary, J. W. Taylor, 1112 Karpen Bldg., Chicago, Ill.

Western Society of Engineers—President, E. H. Lee, Dearborn Sta., Chicago; Secretary, J. H. Warder, 1735 Monadnock Bldg., Chicago.

MECHANICAL AND TRADE SOCIETIES.

Air Brake Association—Secretary, F. M. Nellis, 53 State St., Boston, Mass.

American Boiler Manufacturers' Association—President, W. C. Connelly, E. Cleveland, Ohio; Secretary, J. D. Farsey, 37th St. and Erie Ry., Cleveland, O.

American Electric Railway Association—Secretary-Treasurer, E. B. Burritt, 29 W. 39th St., New York City.

American Electric Railway Manufacturers' Association—Secretary-Treasurer, H. G. McConaughy, 165 Broadway, New York City.

American Foundrymen's Association—Secretary, A. O. Backert, 12th and Chestnut Sts., Cleveland, Ohio.

American Institute of Metals—Secretary-Treasurer, W. M. Corse, 106 Morris Ave., Buffalo, N. Y.

American Railway Association—General Secretary, W. F. Allen, 75 Church St., New York City.

American Railway Bridge and Building Association—President, L. D. Hadwen, C. M. & St. P. Ry., Chicago; Secretary, C. A. Lichty, C. & N. W. Ry., Chicago.

American Railway Master Mechanics' Association—President, F. F. Gaines, S. M. P. Central of Ga. Ry., Savannah, Ga.; Secretary, J. W. Taylor, Karpen Bldg., Chicago.

American Railway Tool Foremen's Association—Secretary, O. D. Kinsey, Illinois Central R. R., Chicago.

Association of Maintenance Way Master Painters (United States and Canada)—President, J. S. Rice, L. S. & M. S. R. R., Elkhart, Ind.; Secretary, Harry J. Barkley, I. C. R. R., Carbondale, Ill.

Boiler Makers' Supply Men's Association—Secretary, Geo. Slate, The Boiler Maker, 17 Battery Pl., New York City.

Car Foremen's Association of Chicago—President, Canadian Association of Stationary Engineers—Secretary, W. A. Crockett, Mount Hamilton, Ont., Can.

Canadian Roadmasters' Association—Secretary, J. M. Mackenzie, West Toronto, Can.

dent, Chas. J. Wymer, Belt Ry. of Chicago; Secretary, Aaron Kline, 841 N. 50th Ct., Chicago.

General Superintendents' Association of Chicago—Secretary, A. M. Hunter, 321 Grand Central Station, Chicago.

International Railroad Master Blacksmiths' Association—Secretary, A. L. Woodworth, C. H. & D. Ry., Lima, O.

International Railway Fuel Association—C. G. Hall, Secretary, 922 McCormick Bldg., Chicago.

International Railway General Foremen's Association—Secretary-Treasurer, Wm. Hall, C. & N. W. Ry., 1126 W. Broadway, Winona, Minn.

International Union of Steam Engineers—President, Matt Comerford; Secretary-Treasurer, James G. Hannahan, 6334 Yale Ave., Chicago.

Master Boiler Makers' Association—President, Andrew Green, Big Four R. R., Indianapolis, Ind.; Secretary, Harry D. Vought, 95 Liberty St., New York City.

Master Car Builders' Association—President, D. F. Crawford, G. S. M. P., Penn. Lines, Pittsburgh, Pa.; Secretary, J. W. Taylor, Karpen Bldg., Chicago, Ill.

Master Car and Locomotive Painters' Association—Secretary, A. P. Dane, B. & M. R. R., Reading, Mass.

Maintenance of Way Master Painters' Association—Secretary, T. I. Goodwin, C. R. I. & P., Eldon, Mo.

National Association of Stationary Engineers—Secretary, Fred W. Raven, 417 S. Dearborn St., Chicago, Ill.

National Founders' Association—Secretary, J. M. Taylor, Room 842, 29 S. La Salle St., Chicago, Ill.

National Railway Appliances Association—Secretary, Bruce V. Crandall, 14 E. Jackson Blvd., Chicago, Ill.

Railway Equipment Manufacturers' Traveling Engineers' Association—President, Wm. S. Flurry, Ohio Injector Co., Monadnock Bldg., Chicago; Secretary, F. N. Bard, Barco Brass & Joint Co., 230 N. Jefferson St., Chicago, Ill.

Railway Signal Association—President, Thos. S. Stevens, A. T. & S. F. Ry., Topeka, Kans.; Secretary, C. C. Rosenberg, Bethlehem, Pa.

Railway Storekeepers' Association—President, G. G. Allen, G. S. K. C. M. & St. Paul R. R., Milwaukee, Wis.; Secretary, J. P. Murphy, Box C, Collinwood, O.

Railway Supply Manufacturers' Association—Secretary, J. D. Conway, 2136 Oliver Bldg., Pittsburgh, Pa.

Roadmasters' and Maintenance of Way Association—Secretary-Treasurer, L. C. Ryan, C. & N. W. Ry., Sterling, Ill.

Supply Men's Association of American Boiler Manufacturers' Association of United States and Canada—President, J. T. Corbett (J. T. Ryerson & Son), Chicago; Secretary, F. B. Slocum (Continental Iron Works), Brooklyn, N. Y.

Traveling Engineers' Association—Secretary, W. O. Thompson, N. Y. C. Car Shops, East Buffalo, N. Y.

A hard worker may not be the best worker.

A self-made man can beat an old rooster at crowing.

The most satisfactory place for a boil is in the kitchen.

Selling ice at a profit of 200 per cent is a cold snap.

Falling in love is painless; falling out again is what hurts.

According to history, Jonah was the first man who wanted the earth.

After a woman gets on the shady side of 30 her birthdays run together like moving pictures.

It is necessary to watch some of your friends every minute or they will let you in on a get-rich-quick scheme.

No. 108

Economy in High Speed Drilling?

Yes: Providing you use a properly made, uniformly tempered Drill
 "CLEVELAND" Drills can always be depended on

The **CLEVELAND** Twist Drill Co.
 CLEVELAND Chicago

NECESSITIES

High Grade Rubber Goods

Fire Hose

Reels, Nozzles

Fire Hose Carts

Rubber Cement

P. & W. Rubber Preservative

Rubber Boots

Leather-Soled Rubber Boots

Leather Belting

Upholsterer's Leather

Leather and Silk Fringes

Vestibule Diaphragms

Gimp

Brass Nails

Leather Head Nails

Signal Flags

Bunting

Linoleum

Cab Cushions

Cab Curtains

Track Jacks

Economy Soap Stock

Nut Locks

GUILFORD S. WOOD

Great Northern Building

CHICAGO, ILLINOIS

BURKE ELECTRIC COMPANY

MAIN OFFICE AND WORKS

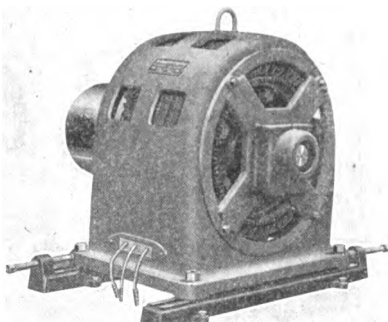
ERIE, PA.

BULLETIN 114

JUN 1908

POLYPHASE INDUCTION MOTORS

MEAS. 14 IN. DIA. 10 IN. H.



TYPE A INDUCTION MOTOR

This Bulletin

is free on your request. You will be better informed on the construction as well as operation of induction motors if you get it and read it.

BURKE ELECTRIC COMPANY

ERIE,
PA.

BURKE ELECTRIC CO., Erie, Pa.
 Please Send Bulletin 114-C

Name.....
 Address.....

IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances
By THE IDEAL POWER PUBLISHING COMPANY
Fisher Building, Chicago

Vol. 11

June, 1915

No. 6

Under the Salesman's Crust

By C. I. HENRIKSON

(Courtesy of American Magazine)

His heart is light. His share of the blessings of this world consists of good health and his job, and he is happy. He has a wealth of sympathy for the troubles of mankind, and they worry him—when he lets them. So he banishes them from his thoughts and learns to carry the light heart. You see, he is a salesman.

He wears a smile. Not because he is continuously happy. Not because the world goes out of its way to make him feel good. Beneath that smiling physiognomy lie pucker strings that could screw his face into a pickle dish if something should slip. But he smiles. He tries to forget the pucker strings. And he succeeds, and then smiles some more. You see, he is a salesman.

He is glad to see you. Not because he experiences any keen personal delight at seeing you. Not because your visage is always good for sore eyes to look at, but because he wants to talk to you. Not to the common everyday you that you wear in your buttonhole and that any and everyone may see, but the you that you keep under cover and trot out on occasions only. The you that has a good opinion of itself, and falls for a little flattery. The you that you recognize as your real self, but

seldom have the time or opportunity to visit with. He looks you squarely in the eye and says he is glad to see you, because he wants to meet your real inner self. You see, he is a salesman.

He holds his head up high, not because he is stuck on himself, but because he believes in his house and his goods. He is proud of them both. He holds his head up high, not because he looks down on his neighbor, but because he wants recognition, and plays his cards above the table. Representation means responsibility. Should he slip, it reflects on the house. It is always safe to be dignified. So he holds his head up high. You see, he is a salesman.

He is dressed in the latest fashion, not too loud, not freakish, but sufficiently up-to-date to give his house and his goods a modern setting. A hundred times a day he makes the statement that to keep on the firing line of progress, the trade must use his goods, or be classed with the back numbers. It's today and tomorrow with him, not yesterday. He can't talk modern improvements in a last year's suit. You see, he is a salesman.

He is clean, within and without. Not that he has webbed feet and feels strange out of a bathtub. Not because he suf-

fers when compelled to wear his linen for two consecutive days. But because he frequently finds his customers indifferent and apathetic, and has to get close to them. Frequently, too, some customer takes a shine to him and insists on seeing much of his society. So he can't take any chances. He has to be prepared. He has to play safe, so he keeps his clothing and his person clean and wholesome. You see, he is a salesman.

He is good-natured. Not because it is a family trait. Not because it is thrust upon him by the happy incidents of his career, but because he finds it both a convenience and a necessity. It is convenient to find business parley automatically lubricated by the oil of his good nature, and it is necessary, when coming in contact with people who have none of it, to call on his own supply and let it grease the ways. He is good-natured. Yes, he has to be. You see, he is a salesman.

He is smart. Not because he has gone to college and has a sheepskin to show for it. Not because he stays up nights and reads books. But because he has to be the master when closing in on a prospect, or a customer. He knows that in a hand-to-hand conflict the stronger wins, and when a prospect is at bay he must not only convince him, but he must make him want the goods. A fool can't do it. It calls for mastery of self and subject. The rebuffs and defeats which fall to his lot result in the mental alertness and refinement that spell education in a truly practical sense. He must be up to the minute. The latest news and intelligence must be toys in his hands. He must be smart. You see, he is a salesman.

He has courage. Not because he is a soldier at heart. Not because he is a volunteer and would rather fight than eat. But he has learned that that for which we seek does not always lie on the ground before us, but is hidden in secret, out-of-the-way places and must be ferreted out. A certain man must be seen. A hundred voices say, "You can't

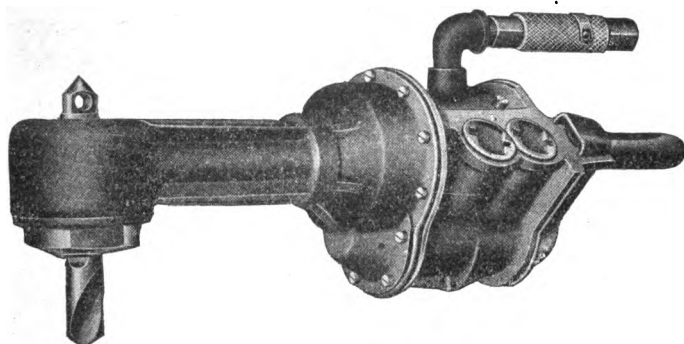
see him." A certain man must be reached. A hundred arms bar the way. Shall he shrink away or be pushed back? No, he must reach his man and meet him face to face. For the time being, at least, there are but two persons on earth, himself and his man. Forbidding hands, dubious headshakes, cautioning advice, are but the hurdles. He wins the race because he has grit and courage. You see, he is a salesman.

He is an optimist. Not because he loses orders or is frequently turned down on the very brink of success, but because at times he must create the very atmosphere he breathes. The cold water that is frequently thrown over him must either have the invigorating effect of a shower bath or he must permit himself to be drowned in it—and he prefers to live. Pessimism is deaf and blind. Optimism hears all, sees all. Defeat for him dares not spell pessimism, for pessimism means death. The prospects must always be bright. Though he sells coffin his line must be a happy line. It must be a pleasure to talk his goods, to buy them and sell them. So he is an optimist, because he is a salesman.

Beneath the beetle's horny shell, folded away out of sight, lies a pair of thin, membranous, iridescent wings. Coaxed by the warm southwest wind it spreads them out on a summer evening and soars away into the mysterious distance.

And the salesman, footsore, weary and tempted by an hour of solitude, forgets his goods and his line, shuffles out of the uniform you have learned to know, and gives himself up to communion with his inner self.

Look at him closely. Those lines in his face didn't all come from smiling. That slight stoop in his shoulders didn't come from holding his head up high. The hand that grasped yours so gladly or patted you on the back with such emphasis sometimes lies open and limp, and all that is worth while in the world if placed in the hollow of his palm would not tempt his fingers to close over it. The courage that bids him face the lion in his den deserts him, when an



No. 3 Little Giant Corner Drill.

This drill can get into narrow spaces and drill holes up to $\frac{7}{8}$ " that cannot be done with any other size or type of machine. Its high speed and its light weight are opening up new fields for pneumatic drilling. Its shape is such that it can be used to drill holes inside of a $5\frac{1}{2}$ " circle, such as a $5\frac{1}{2}$ " flue. On sheet iron work it is particularly handy, for the operator has a better view of his work and its light weight gives him easy control over it.

expected letter from home does not appear. The optimist, the man with such a fund of good nature, the smart man who can create demands and make men buy his goods, wilts when he sits alone and lets his hunger for the kiss of absent wife and babe take the nerve out of him.

A salesman is only human, but lets take off our hats to him for teaching us the practical value of the stiff upper lip and showing us how energy and persistence, when tactfully applied, bring home the bacon.

When times are dull and when the business world turns sour, when "Nothing doing" stalks through the land like a pestilence and paralyzes trade, the salesman, perpetuating the traditions of his calling, continues to spread a gospel of optimism that comes into its own at last. For the smile and handshake of the salesman, his resourcefulness and versatility, his politeness and good-fellowship are the very foundation stones of humanity in business.

But with all that, remember he is only human, and remember the beetle and its silken, sensitive, delicate wings which you cannot see; and when you turn a salesman down don't forget he is a man, and that you are nothing if you are not his brother.

These Men Want Jobs.

Pneumatic Tool repair man with sixteen years' experience wants steady job where good work will be appreciated. Address Ad-2, care Ideal Power.

Air Tool man with railroad experience desires to make a change. Could take entire charge of pneumatic tool department. Address Ad-3, care Ideal Power.

A foreman boiler maker with long and creditable experience, with thorough knowledge of pneumatic tools and with best of references, wants position with some railroad. Address Ad-4, care Ideal Power.

A superintendent of steel construction, with twenty-two years' experience, wants to connect up with some reliable concern. Can furnish best of references. Address Ad-5, care Ideal Power.

A first-class boiler inspector of long experience and excellent habits and character desires a position. Understands pneumatic tools thoroughly. Address Ad-6, care Ideal Power.

A pneumatic tool man with nine years' experience in one of the largest railroad shops of the country wishes to locate in the northwest. Address Ad-7, care Ideal Power.

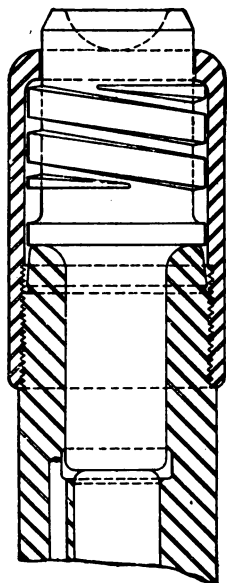
Pneumatic Tools and Their Relation to the "Safety First" Movement

Pneumatic tools have not been overlooked in the "Safety First" movement that is today occupying the serious attention of the lawmaker as well as of labor and the employers of labor, and the Chicago Pneumatic Tool Company early recognized the need and the practicability of safety devices of various kinds.

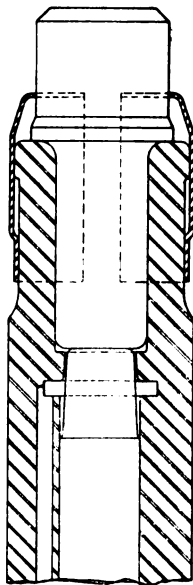
In pneumatic riveting there is always the danger of shooting out of the rivet set and the greater danger of shooting out the piston, and in the earlier designs of pneumatic riveters precautions were taken to prevent accidents of this kind. As a matter of fact, the first successful

pneumatic riveting hammer made was considerably complicated by mechanism designed to prevent the shooting out of the piston and rivet set. But workmen preferred the simpler though more dangerous riveting guns in which the safety devices were omitted, and while we have always had safety appliances of various kinds to offer we have never supplied them except on special request.

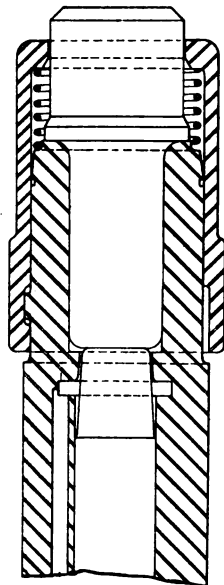
In this article we illustrate a number of safety devices which we can supply. Each has its peculiar advantages and we solicit correspondence with the view of recommending the style best adapted for certain classes of work.



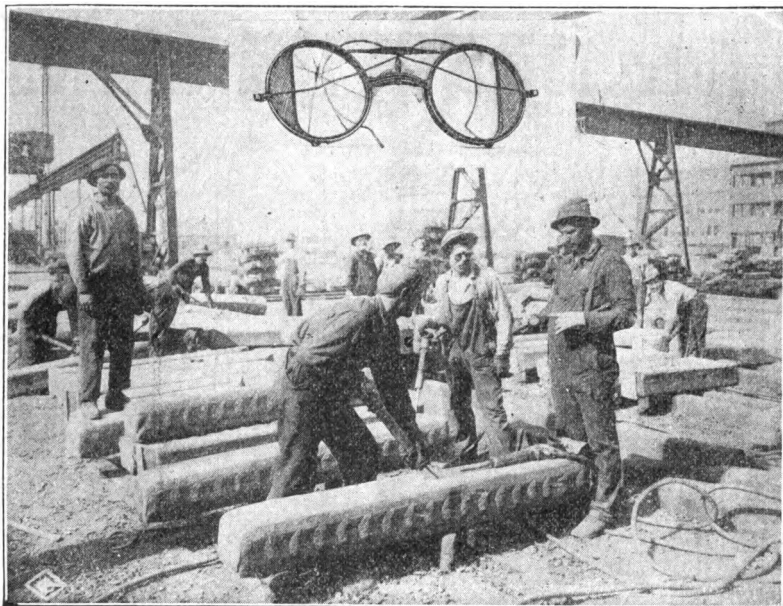
TYPE MS
(Merrill-Shoffner)



Type RWRC
(Retaining Wall
Retaining Clip)

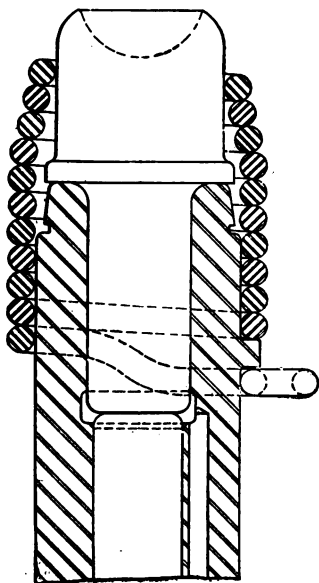


Type RWIH
(Retaining Wall
Interlocking Holder)

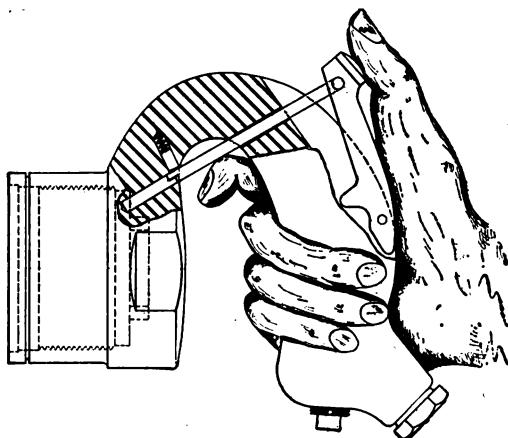


Use Goggles for Safety in Chipping.

At Gary Works Billet Mill chipping yard recently, Kasimir Janicki and Marcin Atlas were chipping on opposite sides of a billet. A chip flew from the other man's chisel and struck Janicki's goggles, breaking them, but the eye was uninjured. The above photo is reproduced through the courtesy of the King Optical Co.



Type S R
(Spring Retainer)



Type B T L
(Boyer Trigger Lock)

Safety First in Housekeeping



demands that germs and dust and dirt be kept out of your carpets, rugs and draperies by the use of a

Duntley Electric Cleaner

The most powerful and satisfactory portable vacuum cleaner made.

Made in sizes suitable for use in offices, hotels, theatres, churches, large or small homes, cottages or apartments, and for commercial cleaning.

If you believe in vacuum cleaning you will insist on a Duntley.

AGENTS WANTED

Some Good Territories Still Open

Duntley Products Sales Company

732 Michigan Ave., CHICAGO

I am in the market for a Duntley Electric Cleaner. Please quote me prices and send descriptive literature.

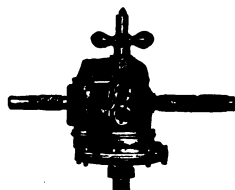
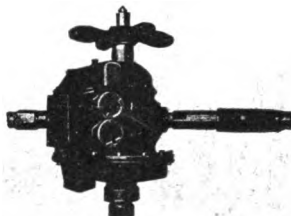
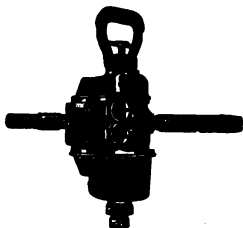
Name

Address

I am interested in agency proposition for following territory

ACCIDENT BULLETIN

No. 64



OPERATING AIR TOOLS

is NOT dangerous work if you wear goggles, yet since January 1st, 1914, 53 MEN HAVE BEEN INJURED badly enough to be laid up or need the doctor to dress the injury. The observance of a few simple rules will prevent many of these injuries.

RULES

"All employes using pneumatic tools; except tappers, must wear goggles." 26 men were injured due to not observing this rule.

"When drills or reamers are stuck, always shut off power before releasing the tool."

"Do not look into or point a pneumatic hammer at another workman if it is connected to the air line."

"Never lengthen dead handles by applying bolt or pipe to it."

"Be sure that the machine will shut off immediately when the valve is closed."

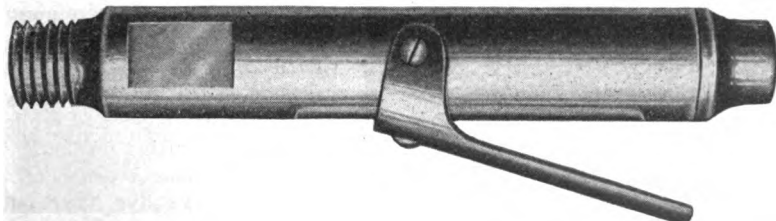
"If your machine is out of order, do not use it."

(CUTS LOANED BY CHICAGO PNEU. TOOL CO.)

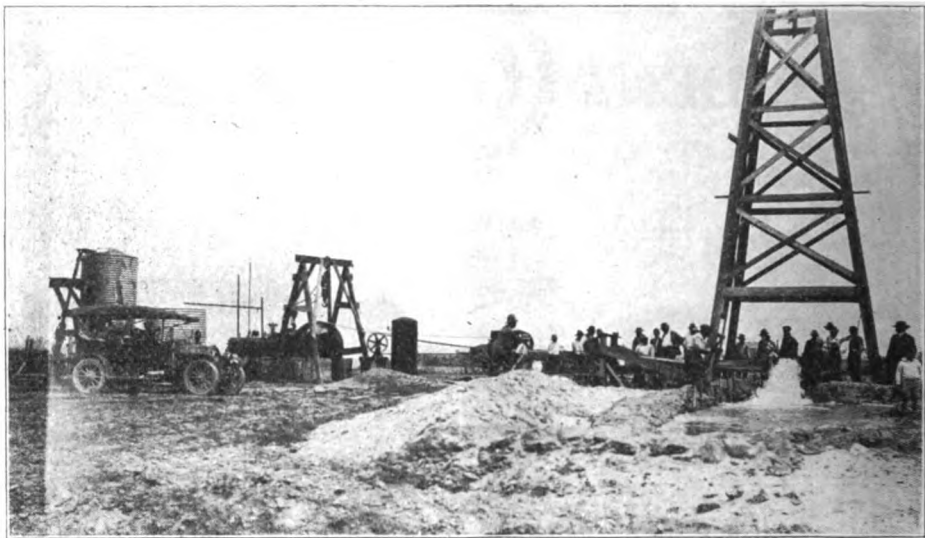
WEAR YOUR GOGGLES.

 Vice President.

Showing how the American Locomotive Co. warn, instruct and protect their employes
(Published with their permission).



A Safety Throttle for Little Giant Air Drills. Closes Instantly When Hand is Removed.



View of the Young Pumping Plant Before Erection of Building.
Giant A-DO Engine at Left.

A-DO Engines in Irrigation Work in Louisiana.

A cut on the front cover of this issue shows the Class A-DO Giant Fuel Oil Engine which has recently been placed on the market by the Chicago Pneumatic Tool Company. The A-DO Giant Fuel Oil Engine consists of two A-O units arranged duplex. Two of these (size 14x14) have just been installed at Opelousas, La.; one of them sold to Dr. B. T. Young, the other to Evans & Chachere. The views shown above and on the page opposite are of the Young plant before the building was put up. The well is 10-inch diameter and is equipped with a Layne & Bowler patent vertical pump. The stream of water shown is 10 inches in diameter and is thrown a distance of 10 feet. The well is a little over 300 feet deep and the water stands 35 feet below the surface of the ground. No measurements were taken to ascertain how deep it falls, but the engine pumps 2,700 gallons per minute easily and this will thoroughly saturate twenty-five acres of the driest ground in nine hours.

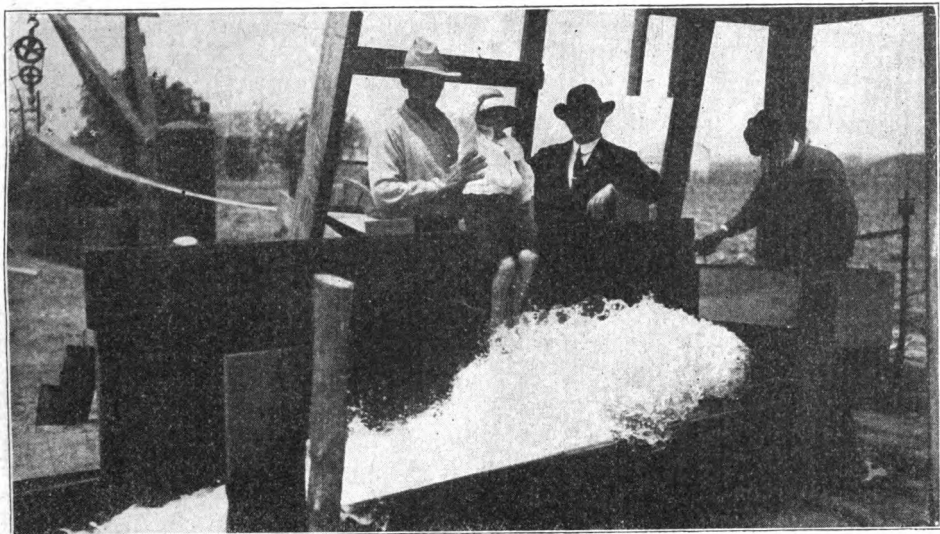
"Uncle Joe" Cannon was asked in Chicago a short time ago what he thought of the outlook for the Republican party in 1916, and he answered with a story: "A black man was arrested for horse stealing while I was prosecuting attorney in Vermilion county," he said. "He was placed on trial after being duly indicted. When his day in court came he was solemnly taken before the judge, who read to him the charge in the indictment. 'Are you guilty or not?' he was asked. The black man rolled uneasily in his chair. 'Well, boss,' he finally broke out, 'ain't dat de very thing we is about to try?'"

A Modern Battle.

A military attache said at a Washington luncheon:

"Modern warfare has no picturesqueness. No beauty. A wounded soldier at Charleroi was asked to describe his impressions of a modern battle. He eased his face bandages and replied:

"'A modern battle? What's it like? Well, first you hear a deuce of a noise, and then the nurse says, 'Try and take a little swaller o' this.'"



Closer View of the Well Opening of the Young Pumping Plant, Operated by Giant A-DO Engine.

The Economy of Fuel Oil as Power.

A 300-ft. "Chicago Pneumatic" N-50 Compressor recently installed in Arizona was operated with "Tops," usually selling in Arizona at 6c per gallon delivered. At 8c per gallon the operating cost of the 60 H.P. Compressor was 27c per hour.

As it easily operates six Chicago Sinker or Stoper drills, the power cost per drill per hour would be 4½c. Comparing this cost with electricity bought at 3c per kilowatt hour, it is just one-fifth, and you don't have to make a monthly guarantee to a power company. In a year the saving would be \$2,916.00 over the electric basis, or twice the original cost of the oil engine compressor. It will easily save \$750.00 a year by using "Tops" instead of gasoline although it uses either, as well as any oils of 28 degrees gravity or above.

Giant oil engines operate exactly the same and can be connected to anything you wish to operate.

If interested, write us for information and prices.

Bouquets—(Brickbats are Not Published.)

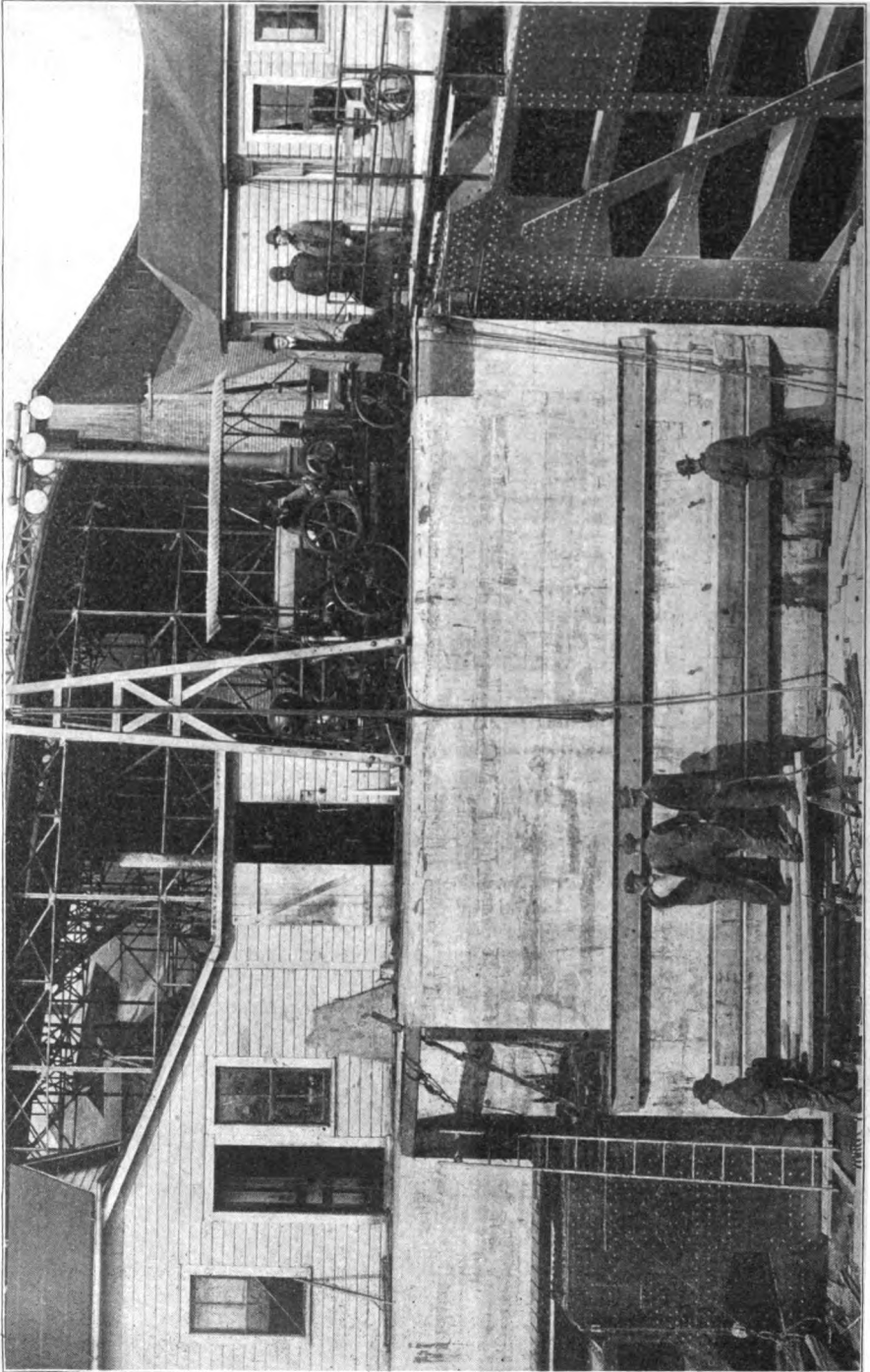
"Your book is placed on our table in the men's smoking room, and our guests,—many of them up in engineering matters, seem to take great pleasure in reading *Ideal Power*, so please keep on sending it."—J. J. L., Brooklyn.

"It is one of the most readable little magazines that comes to my desk."—G. W. S., Elmira, N. Y.

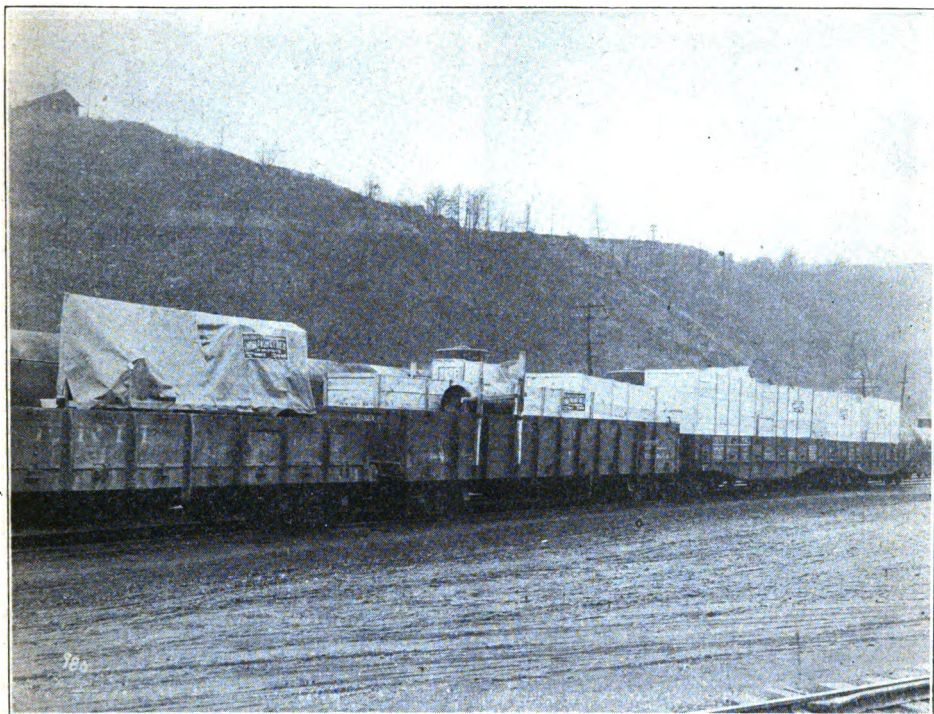
"We are glad to receive and read every copy of *Ideal Power* that reaches us, which is more than we can say about a lot of other publications, and not house organs either."—M. E. Co., St. Louis.

"I have received this publication regularly and have enjoyed it, as have other people connected with our company, largely on account of the interesting way in which the articles are written."—W. H. H., New York.

Gentlemen—I am sorry that I have not received the last issue of "*Ideal Power*," as there are many advertisements in it that are of great importance to me and to the different ones employed by the same company. Again, at different times when the mail on your desk and the work taxes you to the utmost, a few moments in looking over your book—it appears that there is still a ray of hope in the future in store for us.—J. B. S., Columbus, O.



Truck Mounted Chicago Pneumatic Class N-SBE Compressor on Black Rock Lock, Buffalo, N. Y.



A typical day's shipment of Air Compressors from the Franklin, Pa., plant of the Chicago Pneumatic Tool Co., where from sixty to seventy-five Compressors are turned out every month.

Chicago Pneumatic Compressor on Black Rock Lock.

The photograph on the opposite page shows a $7\frac{1}{2} \times 6$ N-SBE "Chicago Pneumatic" Truck Mounted Compressor, used on the Black Rock Lock, Buffalo, N. Y., to furnish air for sand blasting on the steel gates and for drilling in concrete and cement. A Keller $1\frac{3}{4}$ -in. Valveless Rock Drill for drilling bolt holes 1 in. in diameter, 10 in. in depth and $1\frac{1}{4}$ in. in diameter and 10 in. in depth; a Keller No. 5 Plug Drill for drilling holes $\frac{5}{8}$ in. diameter, 6 in. deep, and a No. 80 Boyer Riveting Hammer equipped with M-S Safety Tool Retainer for heavy chipping in concrete and for riveting work on their steel gates, are operated by this compressor.

Where Death Never Calls.

"Is Loneville a healthy place?"

"Healthy? Why, they'll have to kill the population on Judgment Day."

A Poor Marksman.

Sergeant (disgustingly to Private Jones): "Stop! Don't waste your last bullet. Nineteen are quite enough to blaze away without hitting the target once. Go behind that wall there and blow your brains out."

Jones walked quietly away, and a few seconds later a shot rang out.

"Good heavens! has that fool done what I told him?" cried the sergeant, running behind the wall. Great was his relief when he saw Private Jones coming toward him.

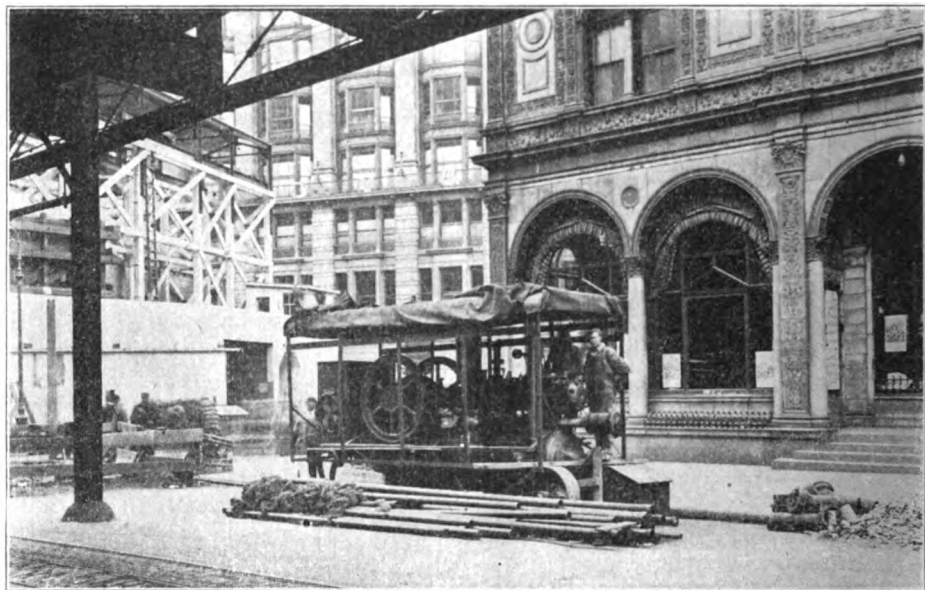
"Sorry, sergeant," he said apologetically, "another miss."—Boston Transcript.

A—A—A—Ah.

Dentist—Open wider, please—wider.

Patient—A—A—A—Ah.

Dentist (inserting rubber gag, towel and sponge)—How's your family?—Harvard Lampoon.



This shows a "Chicago Pneumatic" Gasoline Driven compressor in use by the Consolidated Gas & Electric Co., the machine being at work in Herald Square, New York City. Immediately back of the compressor is the corner of the Herald office, and to the left is shown the structure of the subway contractor engaged in the operation of excavating a section of the new Broadway subway line. In the further background appears a portion of the R. H. Macy & Co. Department Store, which is located on the west side of Broadway, covering a block between 34th and 35th Streets. This compressor is one of three which the Consolidated Gas & Electric Subway Co. have in service, operating rock drills and other pneumatic tools in connection with the work of installing extensions of the conduits and mains.

The Reason.

Stranger (to a vis-a-vis in restaurant) — "I was kept on a strict milk diet a whole year."

Sympathetic Listener — "What was your ailment?"

Stranger — "Just infancy."

Made to Measure.

The Salesperson — "This is very fetching for a tub gown."

Mrs. Plumpleigh's Husband — "Better take it. A tub gown will just about fit your figure."

Jailless Crimes.

Killing time.

Hanging pictures.

Stealing bases.

Shooting the chutes.

Running over a new song.

Smothering a laugh.

Setting fire to a heart.

Murdering the English language.

Faith Needed.

Brown (on fishing trip) — "Boys, the boat is sinking. Is there anyone here that knows how to pray?"

Jones (eagerly) — "I do."

Brown — "All right, you pray, and the rest of us will put on life belts. They're one shy."

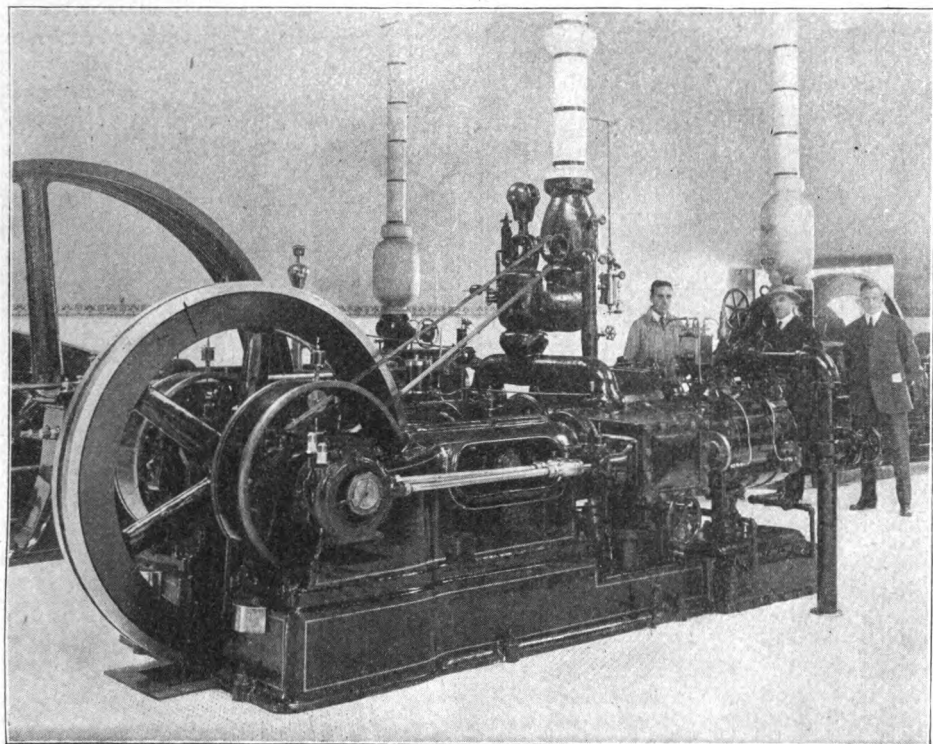
The Price.

Jean longed for a kitten. When illness made it necessary for Jean to go to the hospital, her mother said:

"I will make a bargain with you, Jean. If you will be a brave little girl about your operation, you shall have the nicest kitten I can find."

Jean took the ether, but later, as she came out from under the anesthetic, she realized how very wretched she felt. The nurse leaned over to catch her first spoken word.

"What a bum way to get a cat!" moaned the child.—*Harper's Monthly*.



This is a corner of the White Enamel Refrigerator Company's engine room in St. Paul and shows their "Chicago Pneumatic" two-stage steam and compound air compressor of 690 cu. ft. capacity. To the credit of Chief Engineer M. B. McEwen is due the fact that this is without doubt one of the best laid out, and cleanest and best kept engine rooms in the northwest.

The White Enamel Refrigerator Company manufacture the well known Bohn patent refrigerators used on the leading railroads in their refrigerator, dining and buffet cars. The extent of their business is indicated by their output for 1913, consisting of 11,482 refrigerator cars, 2,500 dining, buffet and observation cars were equipped with the Bohn refrigeration system by the Pullman Company who use this equipment as standard.

Gillilan's Burdette Story.

Here is a gentle little story which Strickland Gillilan told the other day. It concerns the late Robert J. Burdette and James Whitcomb Riley, and happened during Burdette's last summer on earth.

Somebody said to Riley:

"There is one thing about Bob Burdette that particularly impresses me. When he says, 'God bless you' he means it."

"Yes," replied Riley, "and God does it when Bob asks it."

Nick—"What does a billiard ball do when it stops rolling?"

Nack—"Oh, sits a while, and looks 'round, I s'pose."

Nick—"What'll you have?"

Hard on the Major.

Zealous Sentry—"Afraid I can't let you go by without the password, sir."

Irate Officer—"But confound you! I tell you I have forgotten it. You know me well enough. I'm Major Jones."

Sentry—"Can't help it, sir; must have the password."

Voice from the Guard Tent—"Oh, don't stand arguing all night, Bill; shoot 'im and come in to dinner."

Guest—"Look here! How long am I going to have to wait for the half-portion of duck I ordered?"

Waiter—"Till somebody orders the other half. We can't go out and kill half a duck."

IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air
and Electrical Appliances

BY THE

IDEAL POWER PUBLISHING CO.
1014 FISHER BUILDING
CHICAGO, U. S. A.

C. I. HENRIKSON

Editor

Vol. 11

JUNE, 1915

No. 6

TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year
Other Countries in Postal Union, 50 cents per year

ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our
subscription list.

President Duntley Visits the Pacific Coast.

Mr. W. O. Duntley, president of the Chicago Pneumatic Tool Company, has just returned from an extensive trip to the Pacific Coast, where all of the branch offices and larger agencies of the company in California, Oregon and Washington were visited as well as the Panama-Pacific Exposition and intermediate points on the route. Business in connection with air compressors, rock drills and the Little Giant Truck was the chief object of Mr. Duntley's trip. More orders for Little Giant trucks have been booked in the last two months than for any like period in the history of the company, and the prospects for increasing business in this line are excellent.

New Bulletin on Gas Engines.

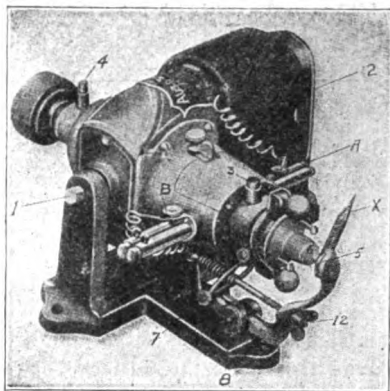
The Chicago Pneumatic Tool Co. has issued Bulletin 34-X, dated May, 1915, relating to their Class A-G "Giant" Gas & Gasoline Engines. The bulletin illustrates these engines in six sizes, ranging in horsepower from 16 to 130. The engines are similar in general design to the well known Giant fuel oil driven engines manufactured by the same company with the exception that they are designed for operation with manufactured or natural

gas. Their enclosed self-oiling features, extreme simplicity and perfect automatic regulation should recommend them throughout the field where manufactured or natural gas is available for power purposes.

Copies of this bulletin and further information relative to these engines may be obtained by applying to the Chicago Pneumatic Tool Co. at either of the offices above mentioned, or any of its branches in all principal cities.

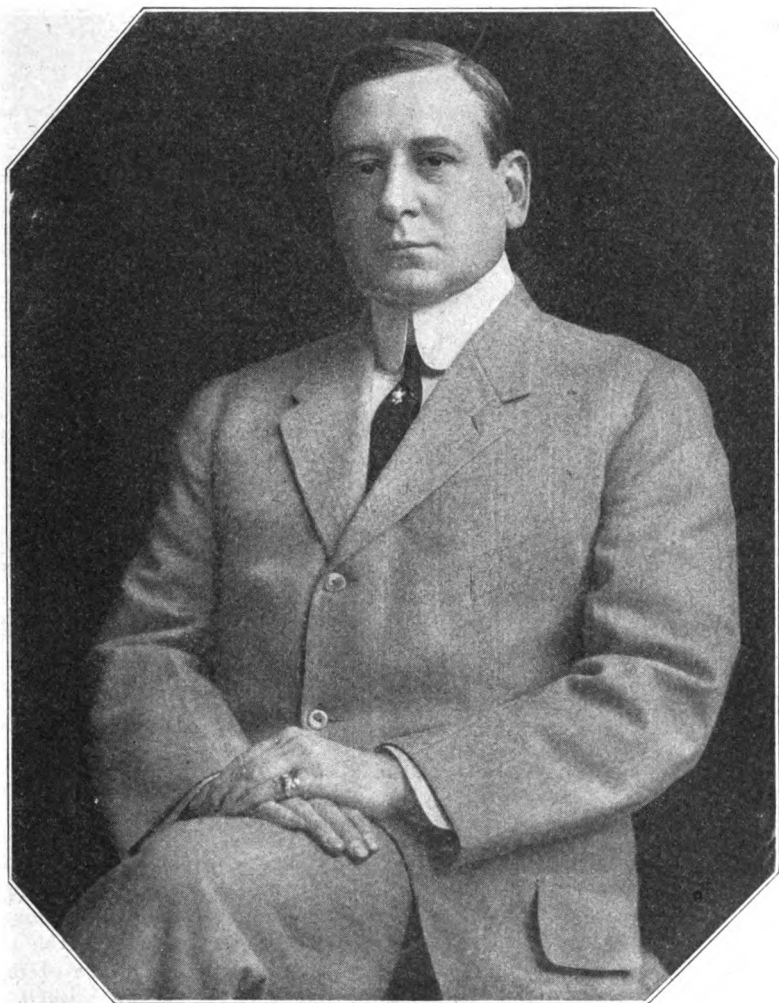
"A Word About Sparkers."

Magnetos or Automatic sparkers are usually an expensive equipment, at the same time all internal combustion engines must be provided therewith. Our attention has just been drawn to the fact that the Chicago Pneumatic Tool Company has an oversupply of the well



The Motsinger Auto Sparker.

known Motsinger Auto Sparker which they have used in connection with their gasoline and oil engines. Those operating motor boats, oil or gasoline engines would find it to their advantage to make inquiry regarding these Motsinger sparkers as they can be purchased singly or the entire lot can be had at an exceptionally low price. It will cost you only the price of a stamp to get the details. Address the editor, please.



W. P. Pressinger, manager of the Compressor and Engine Department of the Chicago Pneumatic Tool Co., who has just transferred his headquarters from New York to Chicago.

Mr. W. P. Pressinger, Manager of the Compressor & Engine Department, Chicago Pneumatic Tool Company, has removed his headquarters from the company's offices at 52 Vanderbilt avenue, New York, to the Fisher Bldg., Chicago. The growth of the company's compressor and fuel oil engine business made this move desirable, as it enables him to keep more closely in touch with all of the company's branches.

On the occasion of Mr. Pressinger's departure from the New York office, he was presented with a handsome cane

expressive of the hopes of his fellows for a safe and pleasant journey, and as a memento to bring back recollections of sixteen years of close and pleasant association in the New York office of the company. Tom Aldcorn made the presentation speech, and although Mr. Pressinger enjoys the reputation of being the silver-tongued orator of the company, we are told a great deal had to be taken for granted in his speech of acceptance.

But we are glad to have Mr. Pressinger with us in Chicago and extend to him the hearty hand of welcome.



New Six-Wheel Little Giant Truck (Front View).

NEW MOTOR TRUCK IS OF STARTLING DESIGN.

Six-Wheeler Machine Can Easily Carry Three-Ton Load.

The Chicago Pneumatic Tool Company has placed on the market a six-wheel truck. This is not a trailer proposition, but the last or third set of wheels is just as much an integral part of the truck as the first set. The new and valuable features of this truck are as follows:

First, low price when compared to high capacity; second, the small amount of upkeep charges for maintenance, consumption of gasoline, oil, etc.; its ability to turn around in a 36-foot space, even when carrying lumber 40 feet long. As an example of its efficiency, the truck made the run from Philadelphia to Baltimore, 107 miles, including all stops, in 7 hours and 38 minutes.

The patents on this truck are controlled and owned by the Chicago Pneumatic

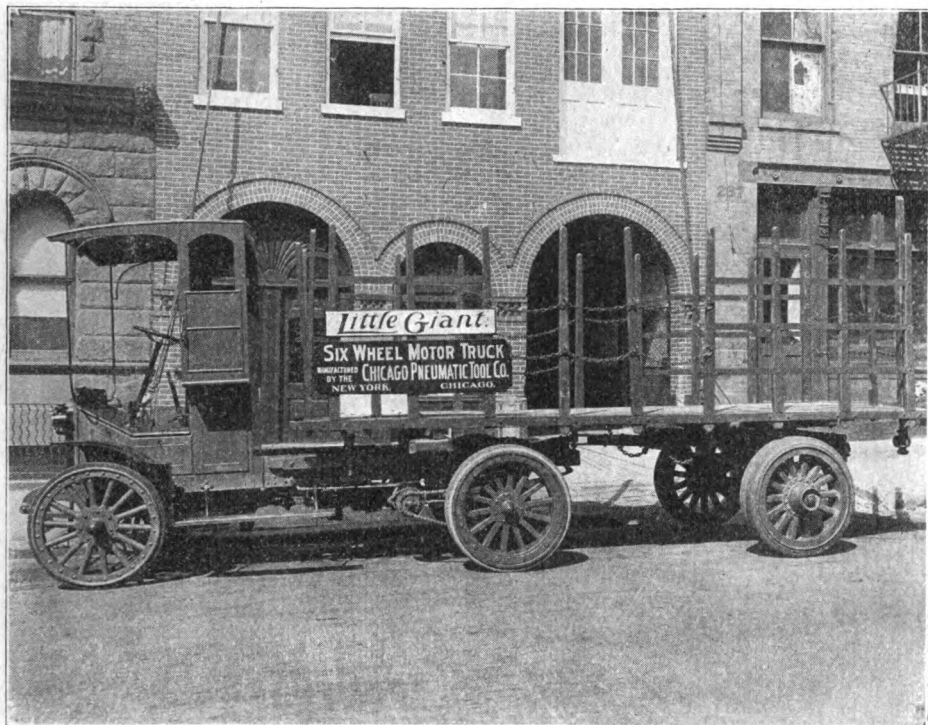
Tool Company, and it enables them to take a standard one-ton Little Giant Truck, equipped with the mechanism as shown on this six-wheel apparatus, and it automatically converts the one-ton truck into one of the three-ton capacity. Another feature of this truck is that it is pulled, not pushed. It will turn corners without interfering with other traffic in a way that no other long-wheel base truck can possibly do. Its entire action is automatic and requires no thought on the part of the driver save the usual handling of an ordinary truck.

She Knew Better.

Passing a swimming school in a small city one day, two country women read this sign at the entrance:

"25,000 Gals. in and Out Every Minute."

"That's all nonsense," said one of the women. "There ain't that many women in this whole town."



New Six-Wheel Little Giant Truck (Side View).

The Three R's in Truck Transportation.

**RADIS
RUSH and
RENT.**

Compare a three-mile radius with one of 15 miles and remember the rule that circular areas are to each other as the squares of their radii. This means that the "sphere" of the average horse and wagon with three-mile radius is to that of the truck as 9 is to 225 or as 1 is to 25. In other words the advantage of the motor truck gives you access to 25 times more territory—get that!

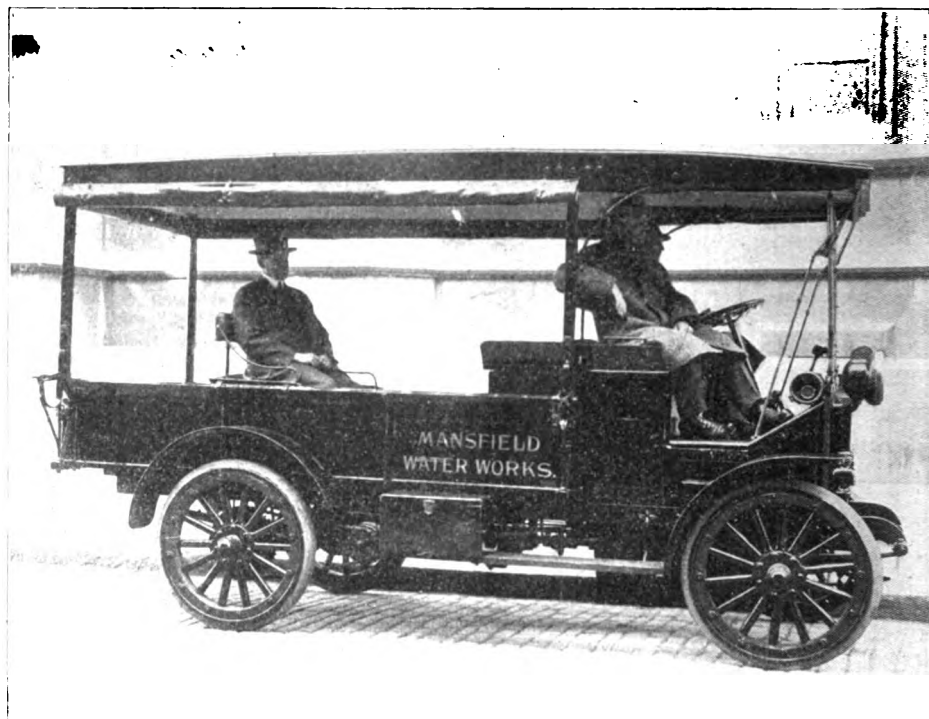
In the rush season you wish your horse were made of steel and that he could work not only all day but half the night. You might even wish you could work him 24 hours a day, at times. But you haven't the heart and you daren't do it. It would kill the horse or cripple him, and you might have a fuss with the Hu-

mane Society. With a truck you need have no such fears, for it has muscles of steel. It is **your** servant. The length of its day is in your hands. Give it gasoline and lubricating oil in the proper quantities and at the proper intervals and its day is 24 hours long—its endurance is limited only by the tensile strength of steel. Horse and wagons, barns, feed bins, etc., require twice the stabling space of motor trucks. And remember horses must be stabled near the store where rents are higher. The motor truck saves money by reducing the rent.

C. I. H.

"There were once two cats of Kilkenny.
Each thought there was one cat too
many;

So they scratched and they bit,
They fought and they spit,
'Till, excepting their nails
And the tips of their tails,
Instead of two cats there wan't any."



Mansfield Buys a Little Giant.

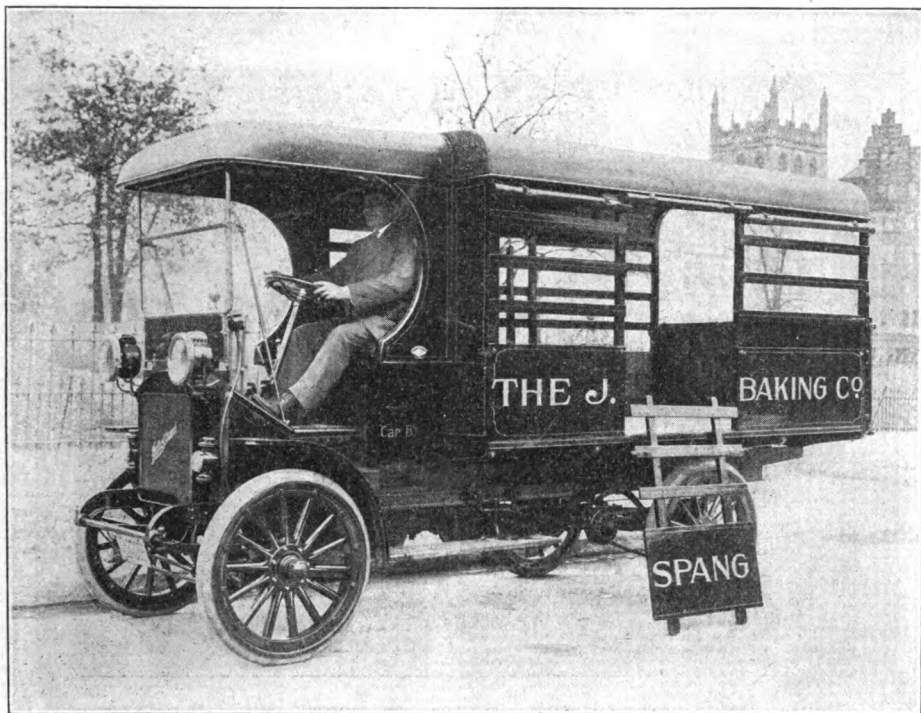
The above is a photograph of a Little Giant Truck sold to the Water Works Department, City of Mansfield, Ohio. The truck was bought on competitive bidding, fourteen different auto truck concerns competing for the business.

Mansfield is a very hilly town and the ease with which the Little Giant negotiated the hills was a determining factor in the tests made.

The car is equipped with auxiliary gas lights, a pipe vise and a full complement of pipe tools, a long length of hose, and



Garage of the Herring Buggy Co., Mansfield, O., agents for the Little Giant Truck.



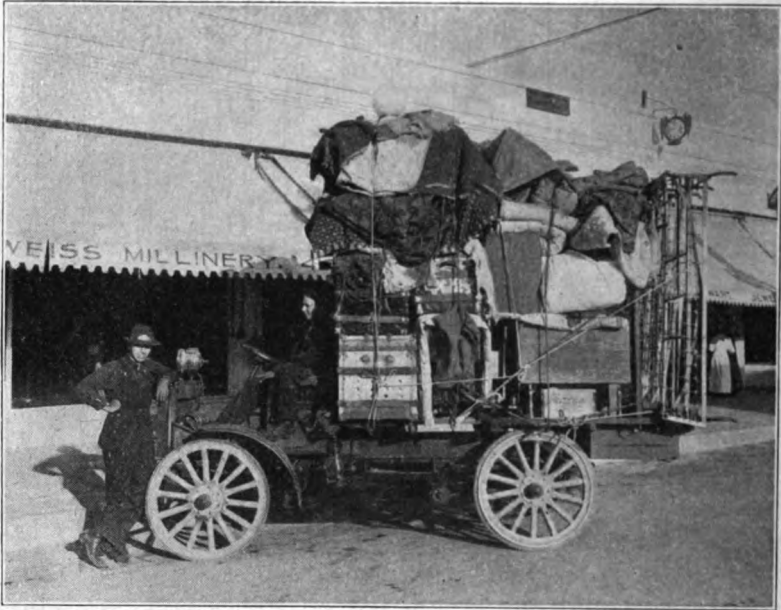
Little Giant Truck used by the J. Spang Baking Co., Cleveland O. (See article below).

in case of mains breaking at night is loaded with repair men and goes out like the engine of the fire department. Mr. McGinty, the Superintendent of Water Works, has gangs of men stationed at various points of the city, each of which he visits at intervals. If they have any pipe to cut they use the truck as a workbench and in this way it is estimated they do the work of about five single rigs, as heretofore they were compelled to send a wagon out, the same standing perhaps all day until they were ready to leave. Now they simply take out the entire gang, drop them off at various points in the city, visit them several times during the day and pick them up at night.

This truck was sold to the city of Mansfield by the Herring Buggy Company, who are the agents for Little Giant Trucks in Mansfield and Richland County, Ohio. A view of their garage is shown below.

Novel Use for a Little Giant.

The Little Giant truck, operated by the J. Spang Baking Co., Cleveland, Ohio, is put to very novel use. It is not used for distributing baked goods from house to house, but is used as a relief truck for the various single rigs scattered over the city; for instance, the wagons all start out from the bakery in the morning loaded with stuff that is hot. By noon they are all sold out, and perhaps when this occurs they are out ten miles from headquarters or point of supply. Then this truck is sent around at stipulated points on schedule to replace their supply. This saves the small wagons from coming away back, which would be an impossibility with horses. Where they previously made one trip a day, by using this supply wagon they can make three or even four, and correspondingly increase their profits.



Little Giant Truck "delivering the goods" for the Monrovia Transfer Co.

Over Fifty Thousand Miles of Haulage With a Little Giant.

The Monrovia Transfer Company of Monrovia, Cal., have had a Little Giant Truck in service since October, 1912. In their letter of May 30, they write us as follows:

"I am glad to give you all the data I have about my Model "D" Little Giant, which I have had in constant service since October 12th, 1912, in the general transfer business, and I also deliver all the goods received at this place by Wells Fargo & Co.

"I am and always was a Little Giant Booster for the reason that I have covered 53,250 miles since I have had it and have overloaded it most of the time. The photo I am sending you is a fair sample of a household moving job and weighs 3,250 pounds. I do not recommend overloading trucks, but in work of this kind you have to take the entire lot or make two trips, which would not be profitable.

"I can cheerfully recommend the Little Giant to prospective buyers, as I have found it reliable and always on the job."

"Matters of Interest."

Tennyson or Longfellow could take a worthless piece of paper, write a poem on it, and make it worth \$60,000.00—That's Genius.

Rockefeller or Carnegie can write a few words on a sheet of paper and make it worth millions of dollars—That's Capital.

The United States can take an ounce and a quarter of gold and stamp upon it the American Eagle, and it is worth \$20.00—That's Money.

A Mechanic can take material worth \$5.00 and make it into watch springs worth \$1,000.00—That's Skill.

A man can earn a thousand dollars and put it in his pocket and lose it, or in his trunk and a thief steal it; or lend it to a private individual and never get it back—That's Foolish.

But, when a merchant draws sufficient funds out of his bank account and buys a "Little Giant Truck"—That's Wisdom.

Moving Pictures Tell the Story of the

"Rockford"

Here you see a No. 4 ROCKFORD MOTOR CAR with a load of eight men with their picks, shovels, and other tools required for section work.

They are on their way, going at the rate of twenty miles per hour. They are in a hurry, and every moment they save in getting to their work is a saving of dollars to the railroad company.

The speed with which the ROCKFORD MOTOR CAR brings them to the job is an inspiration to get to work quickly, and do their work diligently. They become conscious of a certain dignity, and work harder and with more snap and "ginger" than they possibly could after pumping a handcar for several miles. But you see how they are skimming along. The ROCKFORD has a way of "getting there."

It's the ROCKFORD engine that makes it possible for the ROCKFORD MOTOR CAR to cover ground so rapidly, and **SPEED**, in these days of hustle and rush, is a factor that can not be ignored. It is by your **SPEED** you will be judged when the annihilation of space is your object.

And the ROCKFORD MOTOR CAR has speed; for see how it is rapidly disappearing in the distance.

When the virtues of the ROCKFORD MOTOR CAR are considered, the car itself is more eloquent than we could ever hope to be, and it is with the car itself that we would like to have you acquainted.

But twenty miles an hour is no snail's pace, and the ROCKFORD MOTOR CAR has disappeared from view.

Have you Catalog 43? Ask for it.

Chicago Pneumatic Tool Co.

1014 Fisher Bldg.

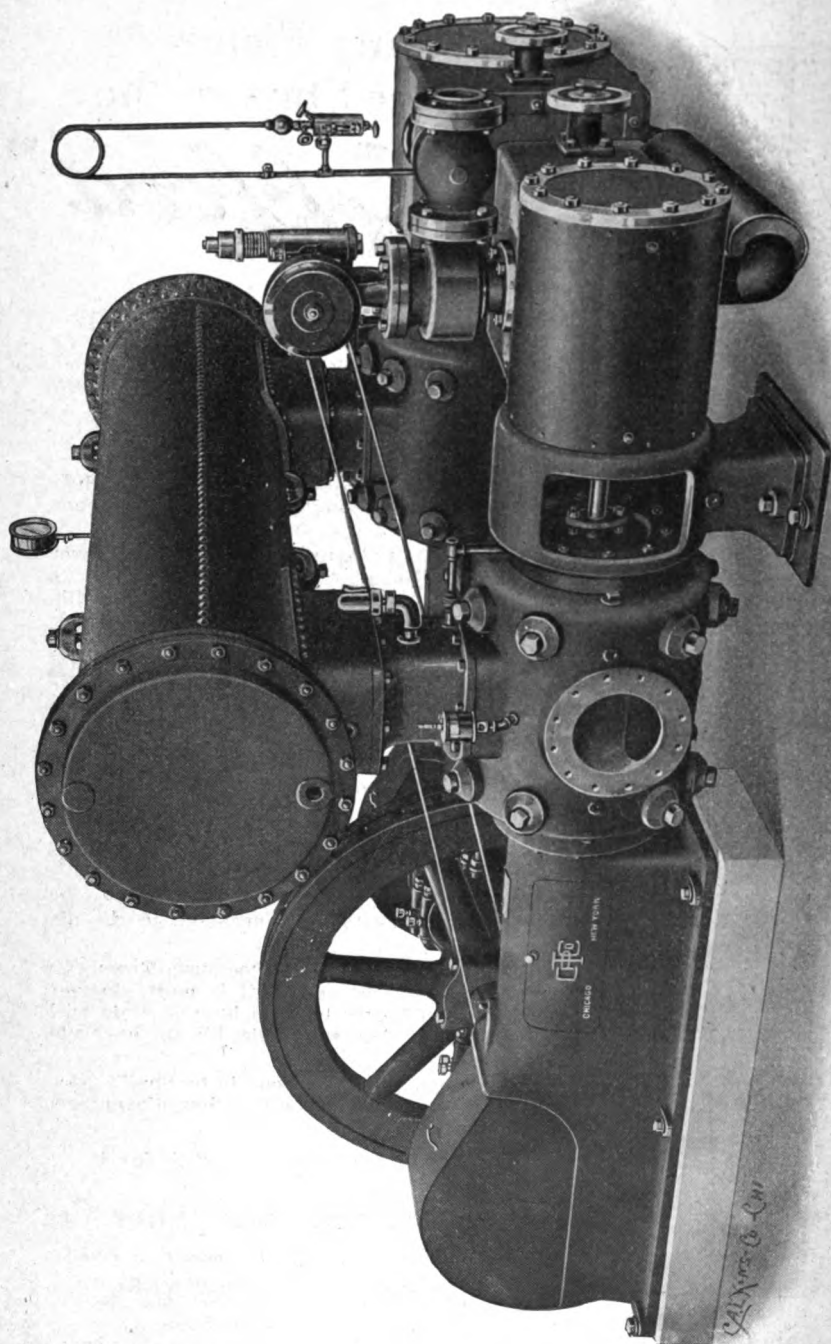
52 Vanderbilt Ave.

CHICAGO

NEW YORK

Branches Everywhere

When writing to advertisers please mention Ideal Power.



"Chicago Pneumatic" Class O-CSC Cross Compound Steam Driven Two Stage Air Compressor, built in capacities up to 1,557 cubic feet of free air per minute at 180 R. P. M., Air cylinders fitted with Simplate inlet and outlet valves, and representing the most advanced design in enclosed type, self-oiling automatically regulated air compressors for general use. Ask for Bulletin 34 M.

Co-Operative Night School.

Editor "Ideal Power":

The attached article, entitled "Co-operative Night School," appeared recently in the "American Machinist," and perhaps it will interest you, showing as it does, the harmony existing between the Chicago Pneumatic Tool Company and its employes. Here is a typical example of men having confidence in themselves and in their employers. The co-operative night school idea could be used to advantage in many organizations, and I feel sure that other firms would, like the Chicago Pneumatic Tool Company, assist in every way possible to improve the education of their employes, because the interest of employer and employe is a common one, and co-operation is the key-note of efficiency.

In this age of efficiency and keen competition the firm employing the highest grade of skilled labor and equipment is the firm that succeeds, and the mechanic who has sufficient initiative to improve himself by education and observation will surely carry the heaviest pay envelope.

(Signed) M. E. GRIFFIN,
Franklin, Pa.

This is the article referred to:

Co-operative Night School.

It is frequently said that night schools are a failure because of the lack of interest on the part of mechanics in such opportunities for education. This seems to be disproved by a somewhat original plan followed by the employes of the air-compressor plant of the Chicago Pneumatic Tool Company, Franklin, Pa.

About a year ago, a few of the mechanics, desiring some form of school or means of educating themselves, called a meeting of all employes interested to decide on a mode of procedure. The result was that they decided to assemble for study at least one night a week. On consulting the management regarding the scheme, they were greatly encouraged, the firm offering assistance, not

only in furnishing a free study room, but also in many other ways. A night school was therefore established which has since proved of inestimable value to all concerned.

From October until May, one night of each week is "school night." Mechanics, foremen, draftsmen, engineers and managers meet together. No fees are necessary, as some of the engineering staff find pleasure in teaching.

The first part of each school night is devoted to instruction in mathematics and its application to modern shop practice; the second part is devoted to answering the questions asked on the preceding night. During the intervening week these questions have been posted in a conspicuous place in the shops as a reminder of what is expected at the meeting following. In asking or answering any question, each man does his part, the blueprint boy having the same privilege as the superintendent or manager.

The following set of questions, which were asked one night and discussed the following, shows how intensely interesting and educational this co-operative school is:

1. How deep should piston-rod stuffing-boxes be made for steam and air ends of compressors?
2. Would a spiral tap be of any advantage in crossheads where a rod is secured to the crosshead?
3. What kind and form of lubrication would you recommend for air-compressor cylinders?
4. What is good cutting speed and amount of surface finished in square inches per minute for cast iron and steel?
5. Explain how to fit a taper-end piston rod in a cast iron or a cast steel piston?

Taken altogether, we consider the co-operative night school a success.

M. E. GRIFFIN.

Franklin, Pa.



Many a patent leather shoe hides an aching corn.

Uneasy lies the head that wears a crown—of false hair.

If it wasn't for men, fewer women would dislike each other.

The demand for sincerity is far in excess of the visible supply.

And man is also the architect of most of his own misfortunes.

A man seldom knows what he doesn't want until after he acquires it.

Whom the gods would destroy they first induce to marry foolishly.

Coquettes are like weather vanes—only fixed when they become rusty.

Instead of calling a doctor, the self-made chap should send for a repairman.

A woman is always telling her husband that a man doesn't know what it is to be sick.

By ordering spring lamb in a poor restaurant you realize how tough it is to die young.

But a man never realizes what fool ideas he has until after he builds a house according to his own plans.

Will the suffragette have to acquire the big black cigar habit before she can make good as a political boss?

Many a man who is brave enough to beard a lion in his den may be shy when it comes to facing the cook in her kitchen.

Worry knocks more men out than overwork.

Cheer up, girls! Leap year is only eight months away.

Between two evils some men always pick the wrong one.

Always try to favor your friends. You can use a few more.

Time softens all things—except a railway restaurant sandwich.

The shorter a young man is on brains the longer he is on collars.

Appearances indicate that the average man doesn't get much beauty sleep.

Many a man who acts on the square during the day is a rounder at night.

What has become of the old fashioned woman who took snuff for weak eyes?

If some people would take the trouble to conceal what they think they would be more popular.

An Ohio hen recently hatched ten chicks from nine eggs. She doesn't belong to the poultry union.

It's usually too late for congratulations when the happy couple have been married more than a week.

The man who chews fine cut tobacco considers himself higher up in the social scale than the man who chews plug.

"Keep a thing for seven years and you'll find some use for it," says an old proverb. That is one reason why we are still keeping our appendix.

The Chicago Pneumatic Tool Co.

MANUFACTURE THE FOLLOWING
PNEUMATIC TOOLS, APPLIANCES, ETC.

After Coolers	Grinders, Portable Electric
Air Compressors	Hammers, Riveting
Air Economizers	Hammers, Chipping and
Air Forge, Chicago	Calking
Air Motors	Hammers, Stone
Air Receivers	Hoists, Duntley Electric
Air Jacks	Hoists, Pneumatic Geared
Air-oilene	Hoists, Straight Lift
Air-oilene Grease	Holders-on
Angle Gears, Little Giant	Hose, Special High Grade
Angle Gears, Boyer	Hose Clamp Tool
Annealing Machines	Hose Couplings (Univ'sal)
Armour Scaling Machines	Inter-Coolers
Automatic Oiling Devices	Magnetic Old Man
Bell Ringers, Little Giant	Oil Driven Compressors
Blow-off Cocks, Little Giant	Oil Engines
Chucks, Drill	Painting Machines
Chucks, Expanding	Pipe Bending Machines
Commercial Car	Pneumatic Saws
Drift Bolt Drivers	Pneumatic Plate
Drills, Boyer	Straighteners
Drills, Keller	Railway Motor Section Cars
Drills, Little Giant	Reamers
Drills, Rock	Reheaters
Drilling Stands	Rivet Busters
Elevators	Riveters, Jamb
Electric Drills, Duntley	Riveters, Yoke
Electric Grinders, Duntley	Riveters, Compression
Engineers' Valves	Sand Rammers
Flue Cutters, Chicago	Sand Sifters
Flue Rollers, and Ex-	Speed Recorders
panders, Little Giant	Staybolt Chucks
Gas Engines	Stone Dressers
Gasoline Driven Com-	Staybolt Nippers
pressors	Vacuum Pumps
Gasoline Engines	Winches, Portable

Duntley Electric Drills and Grinders

Universal Electric Drills

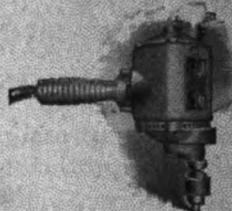
Patented Feb. 18, 1913.

For connection to ordinary lamp socket.

Operating on either direct or alternating current (of 60 cycles or less) single phase, interchangeably.

Cut shows the smallest and lightest electric drill built which will operate on either current. We build seven sizes of drills of this type as follows:

Size No.	Capacity in metal	inch
000.	"	"
000X.	"	"
00.	"	"
0.	"	"
1.	"	"
2.	"	"
3.	"	"



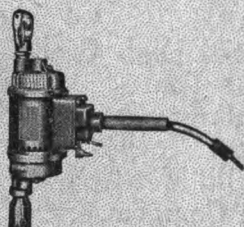
Size No. 000.
Capacity $\frac{1}{16}$ inch in metal

Heavy Duty Direct Current Electric Drills

For 110 and 220 volts.

Built in five sizes as follows:

Size No.	Capacity in metal	inch
0.	"	"
1.	"	"
2.	"	"
3.	"	"
3X.	"	"
4. (Comp.)	"	"
4X.	"	"
5. (Comp.)	"	"



Size No. 0 S-S

The No. 3, 4 and 4x can be furnished in the center spindle as well as the side spindle style.

The No. 3x, 4 Compensated, 4x and 5 Compensated are especially adapted for high speed reaming.

Heavy Duty Alternating Current Electric Drills

For two and three phase.

For connecting to two or three phase power lines. Cannot be operated from lamp socket. Built in five sizes as follows:

Furnished in the "side spindle style only. Standard windings are for 60 cycles, 110 or 220 volts. Size Nos. 2, 3 and 4 can be wound for 140 volts.

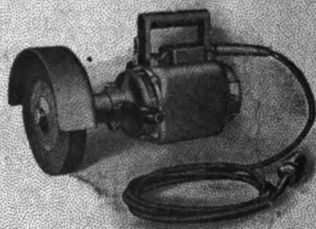
Size No.	Capacity in metal	inch
0.	"	"
1.	"	"
2.	"	"
3.	"	"
4.	"	"

Electric Grinders

For use in the foundry, machine and structural shop. Built in two sizes for 110-220-600 volts direct current, and 110-220 volts two or three phase alternating current.

Size No. 5 BP carries 5x $\frac{3}{4}$ inch wheel
" " 8 BP " 6x1 $\frac{1}{4}$ " "

Universal Grinders can be furnished in three sizes to operate on either direct current or alternating current, interchangeably from an ordinary lamp socket.



Size No. 8 BP Portable Grinder

CHICAGO PNEUMATIC TOOL CO.

1014 Fisher Building, CHICAGO

Branches Everywhere

52 Vanderbilt Ave., NEW YORK

IDEAL POWER



SEE ARTICLE ON PAGE 199



PUBLISHED MONTHLY BY
Chicago Pneumatic Tool Company
 CHICAGO NEW YORK

Chicago Pneumatic Tool Company

Chicago Office, Fisher Bldg.

Eastern Office, No. 52 Vanderbilt Ave.

CHICAGO

NEW YORK

BRANCH OFFICES

Boston: 185 Pleasant Street
 Birmingham: 834 Brown-Marx Bldg.
 Buffalo: 503 Ellicott Square Bldg.
 Cincinnati: 1008 Mercantile Library Bdg.
 Cleveland: 1241 E. 49th St.
 Cleveland: 2122 Euclid Ave.
 Detroit: 2nd Ave. and Amsterdam St.
 El Paso: 303 San Francisco St.
 Erie, Pennsylvania
 Franklin, Pennsylvania
 Los Angeles: 241-243 S. Los Angeles St.
 Louisville, Ky.: 31 Todd Bldg.
 Marquette, Mich.: Lake Shore Eng. Wks.
 Philadelphia: 1740-42 Market St.
 Pittsburgh: 10 and 12 Wood St.
 Portland, Ore.: 46-48 Front St.
 Richmond, Va.: 1004 Mutual Bldg.
 Salt Lake City: 117-119 W. 2nd South St.
 Seattle: 122 King St.
 Spokane: Cor. R. R. and Wall St.
 St. Louis: 813-19 Hempstead St.
 St. Paul: Pioneer Bldg.
 San Francisco: 71 First St.

FOREIGN

Canada: { Montreal, Canadian Pneumatic Tool Co.
 { The Holden Co., Ltd., Montreal, Toronto, Winnipeg
British Columbia: Vancouver, Holden Co., Ltd., 429 Pendar St.
Mexico: Mexico City, The General Supply Co., Av. Isabel La Catolica, No. 51.
Northern Mexico: (Sonora and Chihuahua), Don A. Carpenter & Co., El Paso, Texas.
Great Britain: { London, The Consolidated Pneumatic Tool Company
Spain: { Ltd., 9, Bridge Street, Westminster, S. W.
Portugal: {
France: Paris, Anciens Etablissement Glaenzer & Perreaud 18-20 Faubourg du Temple.
Belgium: Brussels, The Consolidated Pneumatic Tool Co., Ltd., 22 Chaussee de Forest, Porte de Hal.
Italy: Milan, The Consolidated Pneumatic Tool Co., Ltd., via A. Cappellini 7.
Germany: {
Austria Hungary: {
Balkan States: {
Norway: { Berlin, Internationale Pressluft & Elektrizitäts-Gesellschaft m. b. H. Berlin C. 54, Weinmeisterhof, Weinmeisterstrasse No. 14.
Sweden: {
Holland: {
Switzerland: {
Denmark: {
Russia: Petrograd; Phoenix Engineering Works Co., Ltd., Polustrovskaya. Quay No. 39.
India: { Bombay, Consolidated Pneumatic Tool Co., Ltd., Rampart Row, Fort.
 { Calcutta, The Consolidated Pneumatic Tool Co., Ltd., 8 Lal Bazar St.
Japanese Empire: Tokyo, Osaka, Seoul, Dairen, The F. W. Horne Co.
Philippine Islands: Manila, Frank L. Strong Machinery Co., 64-68 Echague.
Australia: Sydney, Henry W. Peabody & Co.
New Zealand: Wellington, Henry W. Peabody & Co.
South America: Buenos Aires, Argentina, Evans, Thornton & Co.
South Africa: { Johannesburg, The Consolidated Pneumatic Tool Co., Ltd., 3 and 9 Cullinan Buildings.

BULLETIN DIRECTORY

Requests for these bulletins should be directed to our Chicago or New York offices or to our nearest branch as shown on inside front cover.

PNEUMATIC TOOLS

- 121... Pneumatic Rammers and Foundry Appliances.
- 124... Pneumatic Riveting, Chipping, Calking and Stone Hammers.
- 125... Pneumatic Yoke, Jam and Shell Riveters, Holders-on, Drift Bolt Drivers, Rivet Busters.
- 126... Compression Riveters.
- 127... Pneumatic Drills, Corner Drills, Reamers, Wood Borers, Flue Rolling and Tapping Machinery and Grinders.
- 128... Miscellaneous equipment for Pneumatic Drills, viz: Chucks, Twist Drills, Reamers, Augers, Flue Cutters, Flue Expanders, Angle Gears.
- 129... Hose, Hose Couplings and Hose Clamp Tools.
- 130... Lubrication of Pneumatic Tools.
- 131... Miscellaneous Tools, viz: Pipe Benders, Air Forge, Bolt Nipper, Drilling Stands, Blow-off Cocks, Bell Ringers, Drill Repair Vises, Painting Machines.
- 132... Pneumatic Motors and Pneumatic Geared Hoists.
- 133... Cylinder Air Hoists and Jacks.

ELECTRIC TOOLS

- E-22.. Heavy Duty Electric Drills, Alternating Current.
- E-25.. Electric Hoists.
- E-31.. Duntley Electric Drilling Stands.
- E-32.. Duntley Track Drills.
- E-33.. Heavy Duty Electric Drills, Direct Current.
- E-34.. Duntley Electric Hammer Drill.
- E-35.. Duntley Universal Electric Drills.
- E-36.. Duntley Electric Grinders.

AIR COMPRESSORS AND FUEL OIL ENGINES

- 34-A.. Class "G" Steam Driven "Chicago Pneumatic" Compressors.
- 34-B.. "Chicago Pneumatic" Power Driven Compressors.
- 34-C.. "Chicago Pneumatic" Gasoline and Fuel Oil Engine Driven Compressors.
- 34-D.. "Chicago Pneumatic" Corliss Compressors, Steam Driven.
- 34-F.. Design and Construction Class "G" "Chicago Pneumatic" Compressors.

- 34-G.. Air Receivers, Aftercoolers, Re-heaters, etc.
- 34-H.. General Instructions for Installing and Operating "Chicago Pneumatic" Compressors.
- 34-K.. Class N-SO and N-SG Fuel Oil and Gas, Driven Compressors.
- 34-L.. General Pneumatic Engineering Information.
- 34-M.. Class "O" "Chicago Pneumatic" Steam and Power Driven Compressors.
- 34-N.. Class N-SS and N-SB Single Enclosed Compressors.
- 34-O.. Instructions for the Installation and Care of "Chicago Pneumatic" Gasoline Driven Air Compressors.
- 34-P.. Class M-CB and M-CE New Enclosed Type Self-Oiling "Chicago Pneumatic" Power Driven Compressors.
- 34-R.. Class L-SS and L-SB New Enclosed Type Self-Oiling "Chicago Pneumatic" Compressors.
- 34-S.. Small Power Driven Compressors.
- 34-T.. Class "M" Corliss Enclosed Type Self-Oiling Four Valve "Chicago Pneumatic" Steam Driven Compressors.
- 34-U.. Instructions for Installing and Operating Class N-SO Fuel Oil Compressors.
- 34-W.. Class A-O Fuel Oil Engines.
- 34-X.. Class A-G Gas and Gasoline Engines.

ROCK DRILLS AND HAND DRILLS

- 148.. Chicago Valveless Hand Drills.
- 149.. Chicago Portable Mine Hoist.
- 150.. Chicago Coal Drills.
- 151.. Chicago Slogger Rock Drills.
- 152.. Chicago Gatling Drills.
- 153.. Chicago Sinker.
- 154.. Chicago Stoper.
- 172.. Chicago Plug and Feather Drill.

LITTLE GIANT TRUCK

Special Ideal Power Supplement.

ROCKFORD and MISCELLANEOUS

- 42.. Boyer Speed Recorder.
- 43.. Rockford Railway Motor Car.
- 117.. Lubrication of Rockford Cars.
- 119.. Operation of Rockford Cars.
- 166.. Boyer Speed Recorder with Clock Attachment.

CHICAGO PNEUMATIC TOOL CO.

1014 Fisher Bldg., CHICAGO Branches Everywhere 52 Vanderbilt Ave., NEW YORK

CONVENTIONS

July 14-17, 1915—International Railway General Foremen's Ass'n at Sherman House, Chicago.

July 19-21, 1915—American Railway Tool Foremen's Ass'n at Hotel Sherman, Chicago.

July 21-24, 1915—Nat'l Elec. Contractors' Assn. at San Francisco.

Aug. 17, 1915—International Railroad Master Blacksmiths' Ass'n at Philadelphia.

Sept. 14-16, 1915—Roadmasters' and Maintenance of Way Ass'n at Chicago.

Sept. 14-17, 1915—Railway Signal Ass'n at Salt Lake City, Utah.

Oct., 1915—Assn. of Railway Elec. Engineers. October, 1915—American Electric Railway Ass'n at San Francisco.

October, 1915—American Electric Railway Manufacturers' Ass'n at San Francisco.

Oct. 19-21, 1915—Maintenance of Way Master Painters' Assn. U. S. & Canada at St. Louis.

October 19-21, 1915—American Railway Bridge and Building Ass'n at Hotel Statler, Detroit, Mich.

Nov. 18-19—Ohio Society of Mechanical, Electrical and Steam Engineers at Zanesville, Ohio.

Dec. 7-10, 1915—American Society of Mechanical Engineers at New York.

ENGINEERING SOCIETIES, ETC.

American Association of Railroad Superintendents (General)—General Secretary, E. H. Harmon, St. Louis, Mo. Next Meeting Aug. 19-21, 1915, at San Francisco.

American Concrete Institute—Secretary, Edw. E. Krauss, Harrison Bldg., Philadelphia, Pa.

American Electric Railway Association—Secretary-Treasurer, E. B. Burritt, 8 W. 40th St., New York, N. Y.

American Highway Association—Executive Secretary, I. S. Pennybacker, Colorado Bldg., Washington, D. C.

American Institute of Electrical Engineers—President, John J. Carty, 15 Dey St., New York; Secretary, F. L. Hutchinson, 33 W. 39th St., New York.

American Institute of Mining Engineers—Secretary, Bradley Stoughton, 29 W. 39th St., New York City.

American Mining Congress—Secretary, J. F. Callbreath, Jr., 1021 Munsey Bldg., Washington, D. C.

American Order of Steam Engineers—Supreme Chief Engineer, J. W. Parent, Philadelphia, Pa.; Supreme Corresponding Engineer, Edw. A. Reboul, 1110 Earl St., Philadelphia, Pa.

American Railway Engineering Association—Secretary, E. H. Fritch, 1011 Karpen Bldg., Chicago, Ill.

American Road Builders' Association—Secretary, E. L. Powers, 150 Nassau St., New York.

American Society of Civil Engineers—Secretary, Chas. Warren Hunt, 220 W. 57th St., New York City.

American Society of Engineering Contractors (Inc.)—Secretary, J. R. Wemlinger, South Ferry Bldg., New York City. Meetings: Second Thursday every month.

American Society of Heating and Ventilating Engineers—Secretary, J. J. Blackmore, 29 W. 39th St., New York City.

American Society of Mechanical Engineers—Secretary, Calvin W. Rice, 29 W. 39th St., New York City.

American Society of Naval Engineers—Secretary-Treasurer, Lieut. A. T. Church, U. S. N., Navy Department, Washington, D. C.

American Water Works Association—Secretary, J. M. Diven, 47 State St., Troy, N. Y.

Association of Civil Engineers, Cornell University—President, A. F. Williams, Ithaca, N. Y.; Secretary, A. S. Patrick, Ithaca, N. Y.

Association of Engineering Societies—Chairman Board of Managers, John W. Woermann, 428 Custom House, St. Louis, Mo.; Secretary, Joseph W. Peters, 3817 Olive St., St. Louis, Mo.

Association of Railway Electrical Engineers—Secretary, J. A. Andreucetti, C. & N. W. Ry. Co., Chicago, Ill.

Boston Society of Civil Engineers—Secretary, S. Everett Tinkham, 715 Tremont Temple, Boston, Mass.

Canadian Society of Civil Engineers—Secretary, Clement H. McLeod, 176 Mansfield St., Montreal, Can.

Canadian Railway Club—Secretary, James Powell, Grand Trunk Ry., Montreal, Que.

Central Railway Club—Secretary, H. D. Vought, 95 Liberty St., New York.

Civil Engineers' Society of St. Paul—Secretary, Edw. J. Dugan, Room 7, Old State Capitol Bldg., St. Paul, Minn.

Cleveland Engineering Society—Secretary, David Gaehr, Chamber of Commerce Bldg., Cleveland, Ohio.

Connecticut Society of Civil Engineers—President, C. C. Elwell, New Haven, Conn.; Secretary-Treasurer, J. Frederick Jackson, Box 1304, New Haven, Conn.

Detroit Engineering Society—Secretary-Treasurer, E. M. Walker, 532 M. C. Sta., Detroit, Mich.

Engineering Association of the South—Secretary-Treasurer, W. Harwell Allen, 928 Stahlman Bldg., Nashville, Tenn.

Engineers' Club of Cincinnati—Secretary, E. A. Gast, P. O. Box 333, Cincinnati, Ohio.

Engineers' Club of Minneapolis—President, L. S. Gillette, 74 Chamber of Commerce, Minneapolis, Minn.; Secretary, Louis Clousing, 2411 Oakland Ave., Minneapolis.

Engineers' Club of Philadelphia—Secretary, L. H. Kenney, 1317 Spruce St., Philadelphia, Pa.

Engineers' Club of St. Louis—Secretary, W. W. Horner, 5203 Maple Ave., St. Louis, Mo.

Engineering Society of Purdue University, Lafayette, Ind.—Secretary, C. B. Penrod, 123 State St., W. Lafayette, Ind.

Engineering Society of Buffalo—President, John Younger; Secretary, W. J. Gamble, 295 Ontario St.

Engineers' Society of Pennsylvania—Secretary, E. R. Dasher, 31 So. Front St., Harrisburg, Pa.

Engineers' Society of Northeastern Pennsylvania—Secretary, T. F. McKenna, care of Engineers' Club, Scranton, Pa.

Engineers' Society of Western Pennsylvania—Secretary, Elmer K. Hiles, 2511 Oliver Bldg., Pittsburgh, Pa.

Illinois Society of Engineers and Surveyors—Secretary, E. E. R. Tratman, Wheaton, Ill.

Indiana Engineering Society—Secretary, Chas. Brossmann, Indianapolis, Ind.

International Railway Congress Association—President (of the International Commission), W. Toudeller, 11 Rue de Louvain, Brussels, Belgium; Secretary, General L. Weissenbruch, same address.

Iowa Engineering Society—Secretary-Treasurer, Prof. J. H. Dunlap, Iowa City, Iowa.

Lake Superior Mining Institute—Secretary, A. J. Yungbluth, Ishpeming, Mich.

Louisiana Engineering Society—President, L. C. Datz; Secretary, W. T. Hogg, P. O. Sta. 20, New Orleans, La.

Michigan Engineering Society—President, Delmar E. Teed, Cadillac, Mich.; Secretary, Samuel J. Hoexter, Ann Arbor, Mich.

Montana Society of Engineers—President, Martin H. Gerry, Jr., Helena, Mont.; Secretary, Clinton H. Moore, Butte, Mont.

New England Association of Commercial Engineers—Secretary, Lewis L. Warren, 107 Equitable Bldg., Boston, Mass.

New England R. R. Club—Secretary, W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass.

New York Railroad Club—Secretary, Harry D. Vought, 95 Liberty St., New York, N. Y.
 Ohio Engineering Society—President W. F. Schepflin, Fremont, O.; Secretary, Jno. Laylin, Hartman Bldg., Columbus, O.
 Ohio Society of Mechanical, Electrical and Steam Engineers—Secretary-Treasurer, Frank E. Sanborn, Ohio State University, Columbus, O.
 Railway Club of Pittsburgh—Secretary, J. B. Anderson, Room 207, Penn. R. R. Station, Pittsburgh, Pa.
 Richmond Railroad Club—Secretary, F. O. Robinson, C. & O. Railway, Richmond, Va.
 Rochester Engineering Society of Rochester—Secretary-Treasurer, F. C. Taylor, 34 Clinton Ave., Rochester, N. Y.
 St. Louis Railroad Club—Secretary, B. W. Frauenthal, Union Station, St. Louis, Mo.
 Southern & Southwestern Railway Club—Secretary, A. J. Merrill, Grant Bldg., Atlanta, Ga.
 Toledo Society of Engineers—President, L. M. Gram, 1047 Spitzer Bldg., Toledo, O.; Secretary, L. T. Owen, 1047 Spitzer Bldg., Toledo, O. Regular meeting, second Friday in each month.
 Utah Society of Engineers—Secretary, C. J. Ullrich, 321 Felt Bldg., Salt Lake City, Utah. Third Friday of each month, except July and August.
 Vermont Society of Engineers—Secretary, Geo. A. Reed, Barre, Vt.
 Western Railway Club—Secretary, J. W. Taylor, 1112 Karpen Bldg., Chicago, Ill.
 Western Society of Engineers—President, Wm. B. Jackson, Harris Trust Bldg., Chicago; Secretary, J. H. Warder, 1735 Monadnock Blk., Chicago.

MECHANICAL AND TRADE SOCIETIES.

Air Brake Association—Secretary, F. M. Nellis, 53 State St., Boston, Mass.
 American Boiler Manufacturers' Association—President, W. C. Connelly, Ivanhoe Road and Nickle Plate R. R., Cleveland, O.; Secretary, J. D. Farasey, 37th St. and Erie Ry., Cleveland, O.
 American Electric Railway Association—Secretary-Treasurer, E. B. Burritt, 8 W. 40th St., New York City.
 American Electric Railway Manufacturers' Association—Secretary-Treasurer, H. G. McConaughy, Suite 1002, 165 Broadway, New York City.
 American Foundrymen's Association—Secretary, A. O. Backert, 12th and Chestnut Sts., Cleveland, Ohio.
 American Institute of Metals—Secretary-Treasurer, W. M. Corse, 106 Morris Ave., Buffalo, N. Y.
 American Railway Association—General Secretary, W. F. Allen, 75 Church St., New York City.
 American Railway Bridge and Building Association—President, L. D. Hadwen, C., M. & St. P. Ry., Chicago; Secretary, C. A. Lichty, C. & N. W. Ry., Chicago.
 American Railway Master Mechanics' Association—President, E. W. Pratt, A. S. M. P. & M., care of C. & N. W. Ry., Chicago, Ill.; Secretary, J. W. Taylor, Karpen Bldg., Chicago.
 American Railway Tool Foremen's Association—Secretary, O. D. Kinsey, Illinois Central R. R., Chicago.
 Boiler Makers' Supply Men's Association—Secretary, Geo. Slate, The Boiler Maker, 17 Battery Pl., New York City.
 Canadian Association of Stationary Engineers—Secretary, W. A. Crockett, Mount Hamilton, Ont., Can.
 Canadian Roadmasters' Association—Secretary, J. M. Mackenzie, West Toronto, Can.
 Car Foremen's Association of Chicago—President, Chas. J. Wymer, Gen. For. for Belt Ry. of Chicago; Secretary, Aaron Kline, 841 N. Lawler Ave., Chicago.

General Superintendents' Association of Chicago—Secretary, A. M. Hunter, 321 Grand Central Station, Chicago.
 International Railroad Master Blacksmiths' Association—Secretary, A. L. Woodworth, C. H. & D. Ry., Lima, O.
 International Railway Fuel Association—C. G. Hall, Secretary, 922 McCormick Bldg., Chicago.
 International Railway General Foremen's Association—Secretary-Treasurer, Wm. Hall, C. & N. W. Ry., 1126 W. Broadway, Winona, Minn.
 International Union of Steam Engineers—President, Matt Comerford; Secretary-Treasurer, James G. Hannahan, 6334 Yale Ave., Chicago.
 Master Boiler Makers' Association—President, Andrew Green, Big Four R. R., Indianapolis, Ind.; Secretary, Harry D. Vought, 95 Liberty St., New York City.
 Master Car Builders' Association—President, D. R. McBain, S. M. P., care of N. Y. C. R. R., Cleveland, O.; Secretary, J. W. Taylor, Karpen Bldg., Chicago, Ill.
 Master Car and Locomotive Painters' Association—Secretary, A. P. Dane, B. & M. R. R., Reading, Mass.
 Maintenance of Way Master Painters' Association—United States and Canada—Secretary, T. I. Goodwin, C., R. I. & P., Eldon, Mo.
 National Association of Stationary Engineers—Secretary, Fred W. Raven, 417 S. Dearborn St., Chicago, Ill.
 National Founders' Association—Secretary, J. M. Taylor, Room 842, 29 S. La Salle St., Chicago, Ill.
 National Railway Appliances Association—Secretary, Bruce V. Crandall, 14 E. Jackson Blvd., Chicago, Ill.
 Railway Equipment Manufacturers' Association—President, Wm. S. Furry, Ohio Injector Co., Monadnock Blk., Chicago; Secretary, F. N. Bard, Barco Brass & Joint Co., 212 W. Illinois St., Chicago, Ill.
 Railway Signal Association—President, Thos. S. Stevens, A. T. & S. F. Ry., Topeka, Kans.; Secretary, C. C. Rosenberg, Bethlehem, Pa.
 Railway Storekeepers' Association—President, J. G. Stuart, G. S. K., care of C. B. & O. R. R., Chicago, Ill.; Secretary, J. P. Murphy, Box C, Collinwood, O.
 Railway Supply Manufacturers' Association—Sec'y-Treas., J. D. Conway, 2136 Oliver Bldg., Pittsburgh, Pa.
 Roadmasters' and Maintenance of Way Association—Secretary-Treasurer, L. C. Ryan, C. & N. W. Ry., Sterling, Ill.
 Supply Men's Association of American Boiler Manufacturers' Association of United States and Canada—President, J. T. Corbett (J. T. Ryerson & Son), Chicago; Secretary, F. B. Slocum (Continental Iron Works), Brooklyn, N. Y.
 Traveling Engineers' Association—Secretary, W. O. Thompson, N. Y. C. Car Shops, East Buffalo, N. Y.

BUMP. BUMP, BUMP!

A South Dakota railroad is noted for its execrable roadbed. A new breakman was making his first run over the road at night and was standing in the center of the car, grimly clutching the seats to keep erect.

Suddenly the train struck a smooth piece of track and slid along without a sound. Seizing his lantern, the brakeman ran for the door.

"Jump for your lives!" he shouted. "She's off the track!"



"CLEVELAND" Bridge Reamers

These reamers are designed for rough, severe service in structural iron and steel work and boiler plates. They are particularly adapted for use in pneumatic and electric portable tools.

Write for Circular U.

The CLEVELAND Twist Drill Co.
 Chicago CLEVELAND New York

NECESSITIES

High Grade Rubber Goods

Fire Hose

Reels, Nozzles

Fire Hose Carts

Rubber Cement

P. & W. Rubber Preservative

Rubber Boots

Leather-Soled Rubber Boots

Leather Belting

Upholsterer's Leather

Leather and Silk Fringes

Vestibule Diaphragms

Gimp

Brass Nails

Leather Head Nails

Signal Flags

Bunting

Linoleum

Cab Cushions

Cab Curtains

Track Jacks

Economy Soap Stock

Nut Locks

GUILFORD S. WOOD

Great Northern Building

CHICAGO, ILLINOIS

BURKE ELECTRIC COMPANY

MAIN OFFICE AND WORKS

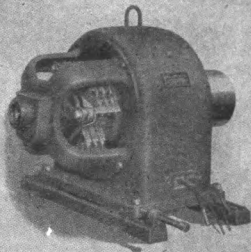
ERIE, PA.

BULLETIN 109

JANUARY, 1912

DIRECT CURRENT MOTORS AND GENERATORS

SIZE 1.5 TO 100 H.P.



TYPE 300 MOTOR WITH RAILS AND FLUENCY

Direct Current Motors

of robust characteristics are illustrated and described in this bulletin.

If you have not yet read about them, send for a free copy.

BURKE ELECTRIC COMPANY

ERIE, PA.

BURKE ELECTRIC CO., Erie, Pa.
 Please Send Bulletin 109-C

Name.....

Address.....

When writing to advertisers please mention Ideal Power.

IDEAL POWER

Published Monthly in the Interest of Motor Trucks and Compressed Air and Electrical Appliances
By THE IDEAL POWER PUBLISHING COMPANY
Fisher Building, Chicago

VOL. 11

JULY, 1915

No. 7

The "Simplate" Valve—Its Construction and Operation

During the past decade, a number of designs of flat plate Compressor Valves have been presented and discarded because of inefficiency and impracticability. These designs were all remarkably similar, varying only in minor details.

The "Simplate," unlike any and all other valves is unique and distinctive in both design and construction. Its chief advantages are that it is simple; that its plates are independent in action, one of another; that each plate has its individual springs; that the tension of the spring on the inlet and discharge valves differs according to the density of the air handled; and lastly that it is applicable to all positions and conditions.

In figure No. 1 we show a discharge valve. The valve seat (A) is cast from a special composition possessing toughness and high tensile strength, and it also has circular ports as shown in the figure. It is machined so that the raised portion of the seat, or the points on which the plates rest forming the joint, is very narrow, thus reducing the unbalanced area to a minimum.

The keeper (B) is of the same material and is provided with suitable ports for the free passage of air through it. It also furnishes the guides for the valve plates, and affords, as well, satisfactory pockets for the valve springs.

The valves (C) are simple concentric steel plates of uniform section, with a separate and independent plate over each port. Each plate is also independently governed by its own springs, hence the action or opening of each valve is entirely independent of the other. Should one of the plates open, the one next to it does not necessarily need to move, unless the speed conditions should demand it. Here we see the great advantage of having the plates independent of one another, rather than for the series of plates to be made from one sheet with openings cut through to allow the air to flow from the different ports.

The springs (D) are of the Volute type and are made of special alloy steel, heat treated and carefully tempered. They have the proper tension for the discharge and inlet valves, so as to effect the most perfect valve action. The parts making up a complete valve are assembled and held together by the nickel steel stud (E) and castle nut (F), and when this nut is securely tightened in place, it is firmly held so by cotter pin (H).

Figure No. 2 shows the inlet valve, the construction of which, as can be seen, is very similar to that of the discharge valve. It differs only in the following respects: The valve stud enters through the keeper instead of through the seat,

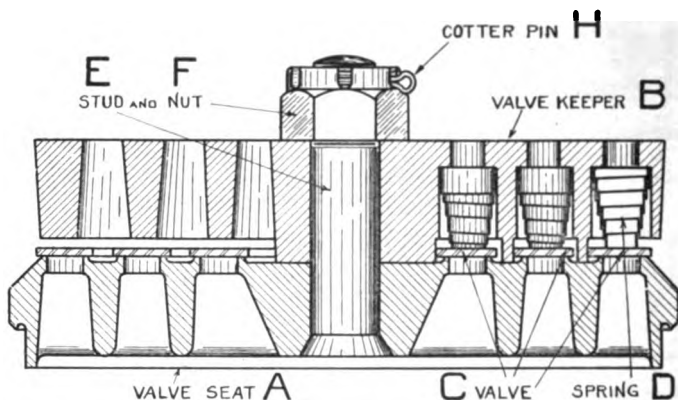


Fig. 1—Simplate Discharge Valve.

as does the discharge; the keeper is thinner; and the springs are of lighter tension. On account of the difference in the thickness of these valves, they cannot be reversed; that is, the inlet cannot be put in where the discharge should be, nor the discharge where the inlet belongs—this precautionary measure we deem to be highly necessary. We make the spring tension on the inlet valves very light so as to get the full benefit of the varied opening of the different plates when the piston speed is changed. For instance, with an inlet valve of the size here shown, the spring tension is so calibrated that the outer plate opens with a pressure of but $\frac{1}{4}$ ounce per square inch, and one ounce will open the intermediate plate, while it requires $2\frac{1}{2}$ ounces to open the inner one. This illustrates the true meaning of the varied opening.

"Simplate" valves are efficient in the highest degree because, they are light and durable; always remain tight, are opened with little work; and are noiseless in operation. They have suitable spring tensions inasmuch as the inlet and the discharge spring tensions differ according to the difference in the density of the air handled; their opening is varied in proportion to the increase or decrease in the piston speed; their location in the cylinder is convenient for examinations or repairs, and allows the air to enter the cylinder through cool and unrestricted passages; and finally, as can be seen from the indicator cards in figures No. 3 and No. 4, the power required to expel the air from a cylinder equipped with "Simplate" valves is a minimum.

"Simplate" valves are remarkably simple, since they have independent plates

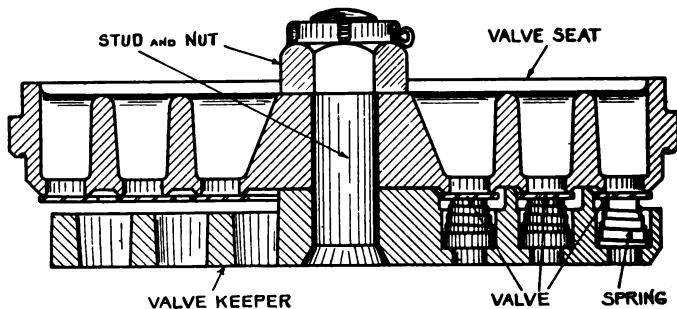


Fig. 2—Simplate Inlet Valve.

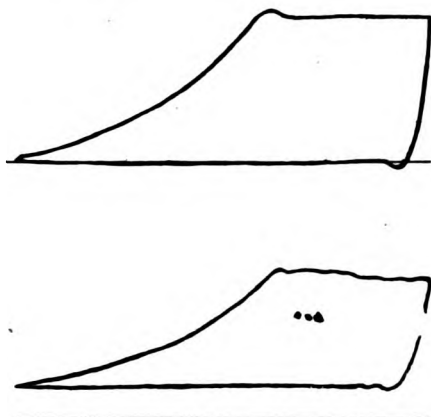


Fig. 3—Indicator Card
from Two Stage Compressor

and springs, and a varied opening, according to speed. At low speed one plate acts—at high speed all operate, hence the action is ideal under all speed conditions.

These valves are silent in operation at all speeds, resulting in little wear and long life; they are equally suited to high and low pressure; and the cost for repairs is reduced to a minimum. They



Fig. 4—Indicator Card
from Single Stage Compressor

insure higher mechanical and volumetric efficiencies than the old style poppet valves; they insure continuous operation under the severest conditions; and the air compressing cylinders are simplified, due to the absence of all intricate valve operating mechanism. The valves require no lubrication; the compressor floor

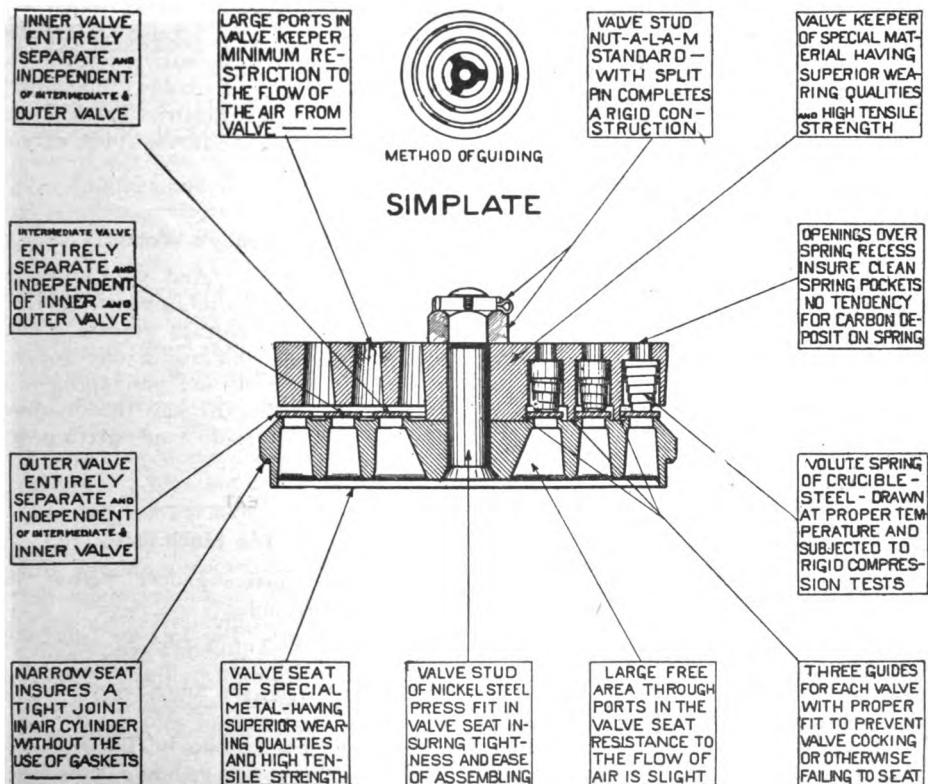


Fig. 5—Advantagous Features of Simplate Valves.

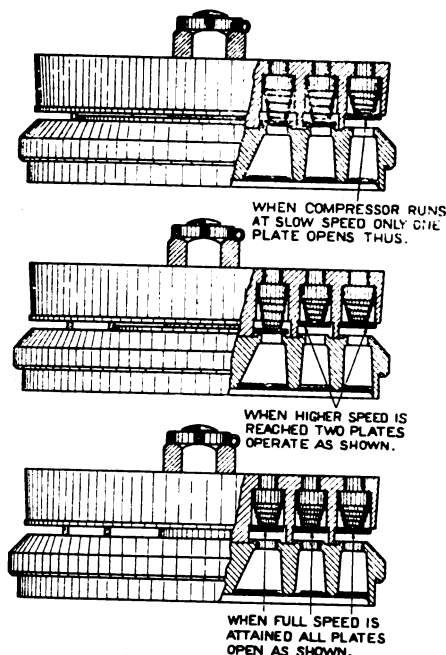


Fig. 6—Showing operation of Simplate Valve at increasing speeds.

space and cost of installation are lessened because of the possibility of getting a greater capacity from a given machine when operated at high speed; and lastly, the valve parts, as well as all other parts entering into the complete unit, are perfectly interchangeable.

Treatment of Material and Guarantee.

All "Simplat" Valve plates are made of a special alloy steel, heat treated, oil tempered, straightened perfectly and ground true on one side only. All valve plates are also rigidly inspected before assembling. Valve springs are made of high grade crucible steel, drawn at the proper temperature, and put through a series of rigid compression tests.

All parts entering into the construction of "Simplat" valves are of the highest quality and workmanship, and the Chicago Pneumatic Tool Company guarantees to repair or replace free of charge, any part which is found to be defective in workmanship or material within a period of one year after date of shipment.

These Men Want Jobs.

A foreman boiler maker with long and creditable experience, with thorough knowledge of pneumatic tools and with best of references, wants position with some railroad. Address Ad-4, care Ideal Power.

A superintendent of steel construction, with twenty-two years' experience, wants to connect up with some reliable concern. Can furnish best of references. Address Ad-5, care Ideal Power.

A pneumatic tool man with nine years' experience in one of the largest railroad shops of the country wishes to locate in the northwest. Address Ad-7, care Ideal Power.

Practical engineer would like to connect with some large electric railway in the capacity of superintendent of machinery or as roadmaster. Has had seven years' practical experience with some of the largest electric railways in the West and can furnish references. Has had experience with practically all makes of track and roadway machinery, including Duntley Electric Track Tools. Can handle men. Address Ad-8, care of Ideal Power.

His Money's Worth.

Scotch Father: "And you must ha' seen a lot of sights in London, eh?"

Scotch Son: "Not so muckle. They charged me six shillings a day for my room at the hotel, and you dinna suppose I was going to pay that without staying in the room and getting my money's worth?"

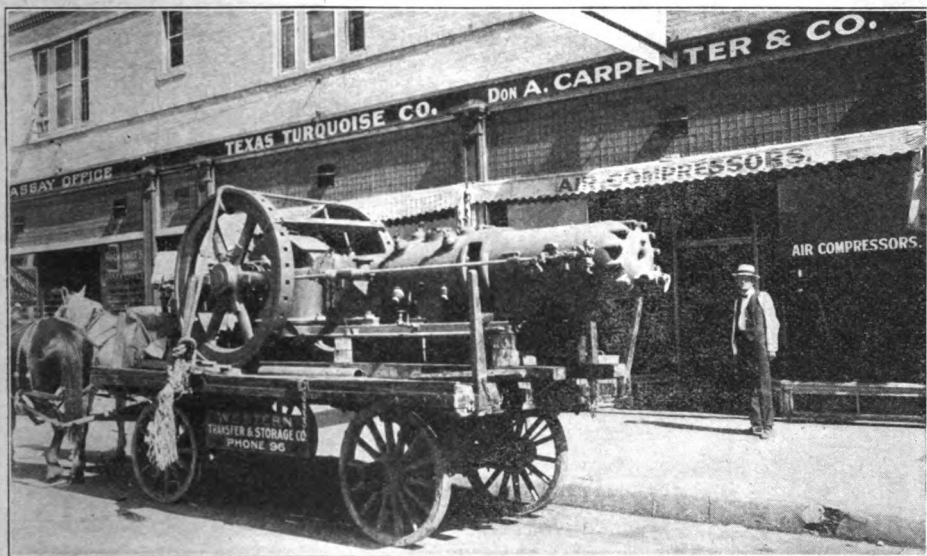
Too Much.

P. C. (to festive gent): "Now, sir, what's the trouble?"

Festive Gent: "I've lost me (hic) umbrella."

P. C.: "Why, it's hung on your arm, sir."

Festive Gent: "Sho it ish (hic). If you hadn't told me I should have gone (hic) home without it."



"Chicago Pneumatic" Class N-S O Fuel Oil Compressor leaving store of Don A. Carpenter & Co., El Paso, for nearby ranch where it is to be used for pumping water. Don A. Carpenter & Co. are Southwestern Agents for the Chicago Pneumatic Tool Co.

To Machinery Dealers and Supply Houses

We want agents and dealers to represent us in territory still open for the sale of our line of "Giant" Fuel Oil and Gas Engines and Compressors, and have a very attractive offer to make reliable houses that wish to make business connections with a \$11,000,000.00 corporation with a record of more than twenty years of business success to its credit.

"Giant" Fuel Oil and Gas Engines are made in four prime sizes, 12, 18, 25 and 45 horse power, and the 25 and 45 H. P. sizes may be supplied duplex, thus giving units up to 90 horsepower capacity. The single units are truck mounted for portable use when desired.

The Giant Fuel Oil and Gas engine will operate successfully on any of the following grades of fuel: Crude Oil, Fuel Oil, Residuum, Stove Oil, Star Oils, Tops, Tar Oil, Solar Oil, Gas Oil, Engine Distillate, Holder Oil, Coal Oil, Kerosene, Alcohol, Motor Spirits, Naphtha, Benzol, Gasoline, Natural Gas, Producer Gas.

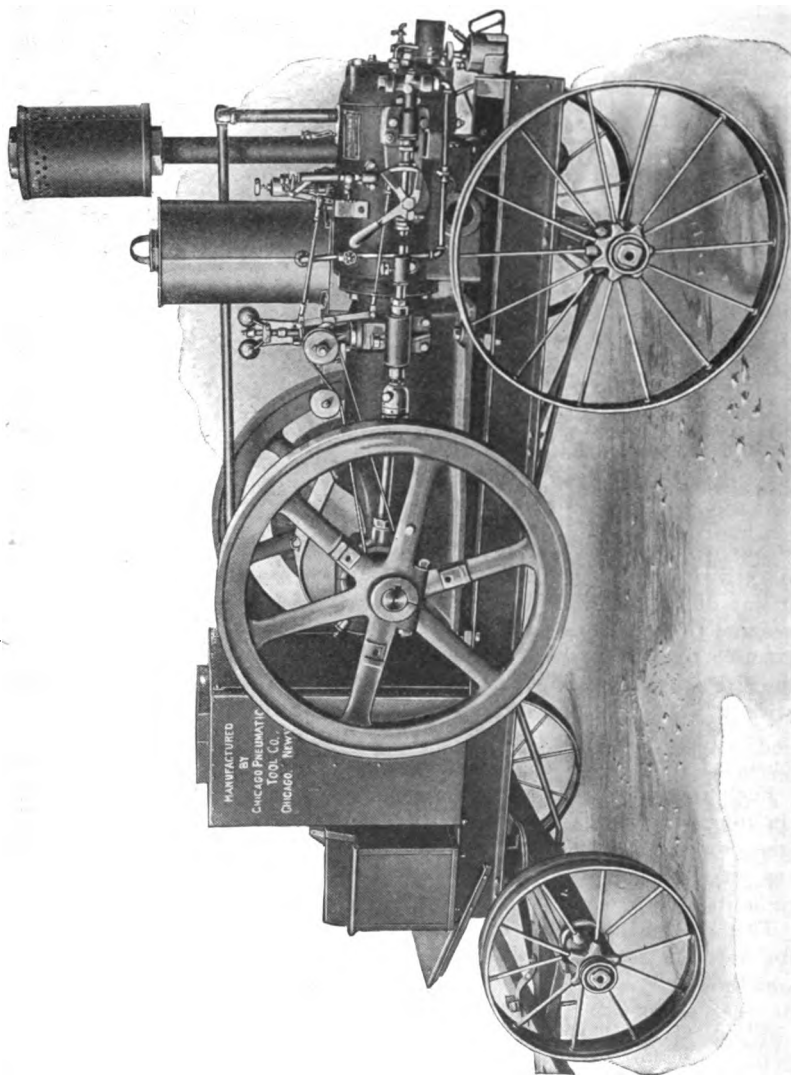
It has no valves, gears, carburetors, mixers, oil or air heaters, magnetos,

batteries, timers, switches, coils, wires or spark plugs.

The employment of a single cylinder minimizes working parts and their consequent friction. The crosshead construction is extremely important, providing features of advantage over the trunk piston type **that cannot and must not be ignored.** The crosshead removes from the piston head the angular thrust of the connecting rod with its tendency to wear the top and bottom of the cylinders more than the sides, with the result that oils of a heavy or asphaltum base will work back and under the piston rings, hardening there and causing excessive cylinder wear.

With the crosshead type all bearings are accessible and by compressing in the front end of the cylinder instead of in the crank case, better compression is secured, there being no joints to offer opportunity for leakage and the compression space is greatly reduced. Lubricating oil from the crank case cannot possibly enter the combustion chamber and disturb regulation.

In design the Giant Engine is the simplest on the market, and its lack of



"Glant" Class A-O Portable Fuel Oil Engine

MANUFACTURED
BY
CHICAGO PNEUMATIC
TOOL CO.
CHICAGO, ILL.

complicated parts and mechanisms recommends it for use in isolated localities, where breakdowns are fraught with serious consequences.

Agents with whom we make connections will be furnished with Bulletins and Salesmen's Catechisms dwelling on the superior merits of the "Giant" engine, explaining thoroughly in the form of questions and answers, all the details of construction and operation, and setting forth very clearly, relative values of the various grades of crude oil, comparative costs of operation, etc.

Our own sales representatives, attached to our branch offices throughout the country, are available to furnish information and assist dealers in effecting sales.

Our "Chicago Pneumatic" Compressors, our Boyer Hammers and Little Giant Drills, our Duntley Electric tools and Little Giant trucks are known throughout the world and we want live agents to introduce our lines of "Giant" Fuel Oil and Gas Engines and Compressors, in localities where we are not yet represented.

Correspond with us. This is a real opportunity.

Compressor and Engine Department,
Chicago Pneumatic Tool Company,
1014 Fisher Bldg., Chicago, Ill.

DO YOU EVER DO ANY CIRCULARIZING?

If you do, send us \$3.00 for a complete directory of the boiler, tank and stack manufacturers of the United States and Canada. The list is up to date and is authorized by the American Boiler Manufacturers' Association of the United States and Canada.—Editor.

A young lady about to be married received from a chum as a wedding gift a broom with a tag carrying this message:

"For this, thy happy wedding day,
A broom I thee will send.
In sunshine use the lower part,
In storm, the other end."

Two Letters That Tell One Story.

Salt Lake City, Utah, Apr. 23, 1915
Mr. W. P. Pressinger,

Care Chicago Pneumatic Tool Co.,
New York, N. Y.

Dear Mr. Pressinger:

Enclosed please find a testimonial letter from the Chief Consolidated Mining Company of Eureka, Utah. The compressor spoken of is a 12 x 7½ x 12 type "N-SO" Skid Mounted, and was purchased of us on Nov. 11th, 1914.

We yesterday had the pleasure of selling these people a repeat order, they ordering of us a tank mounted type "N-SO" 115 foot machine.

If you care to take a reproduction of this testimonial letter do so, but kindly return the original to us as soon as you are through with it.

We have the pleasure to remain

Yours very truly,

F. C. RICHMOND MACHINERY CO.

(Signed) F. C. Richmond,
Pres.

Eureka, Utah, April 20, 1915.
F. C. Richmond Machinery Co.,
Salt Lake City, Utah.

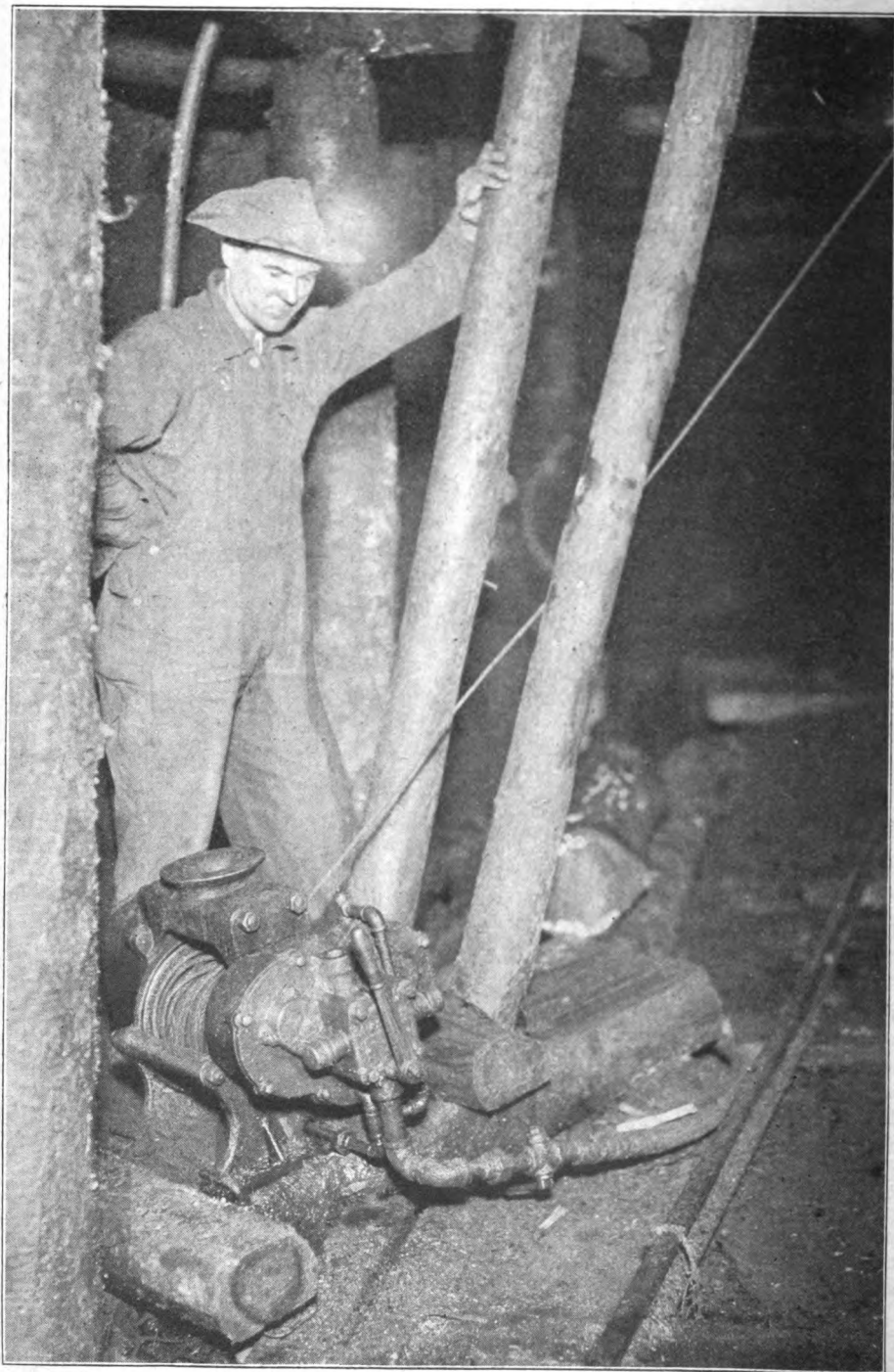
Gentlemen:

In regard to your new Oil Driven Air Compressor which we recently purchased and is now in operation at the Scotia Mine, I wish to state that it has given us entire satisfaction both as to its mechanical and economical properties. We find that it consumes 30 gallons of 30 degree distillate per 24 hours working two eight hour shifts. It handles at present a small hoist on surface, two small hoists underground, two hammers and a stoper. Hereafter we will use these Oil Compressors for all our prospects for it proves to be more efficient than any power in this camp.

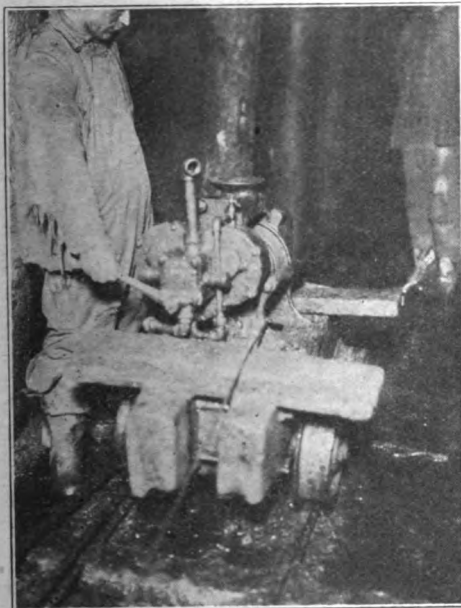
Yours very truly,

C. Fitch, Sup't.
Chief Consolidated Mining Co.

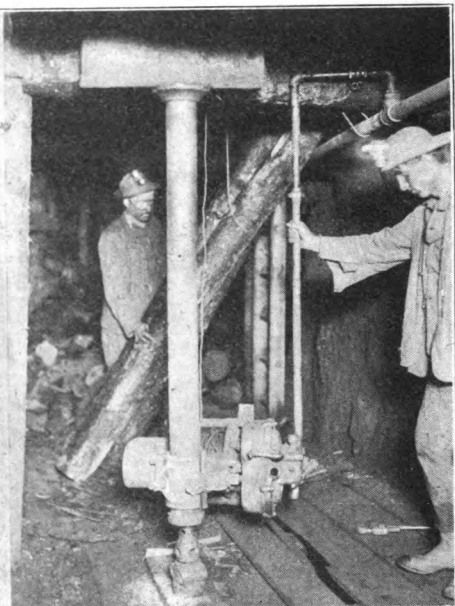
Cheerful old lady—"Well, dominie, the new churchyard's fillin' up real nicely, ain't it?"—Puck.



Chicago Portable Mine Hoist "studdled" on level for hoisting through winze,
at Forbes Mine, Iron River, Mich.



Chicago Portable Mine Hoist mounted on truck to work at different points on level, at Zimmerman Mine, Spring Valley Ore Co., Gastraa, Mich.



Chicago Portable Mine Hoist mounted on column hoisting timber from main level to intermediate levels above, Caspian Mine, Iron River, Mich.

The Hoisting Problem in Mines and Construction Work.

The Portable Mine Hoist, while designed especially for use in mines, has a very wide range of usefulness in construction and contracting work of all kinds. In mining work it solves the problem of economically raising and lowering timber and rock in raises, winzes and stopes. It will haul cars in drifts and tunnels and lower Rock Drills, mountings and drill steel from level to level. In construction work it is a general utility device, raising and lowering machinery and materials quickly and safely, and can be set up or torn down in a few minutes.

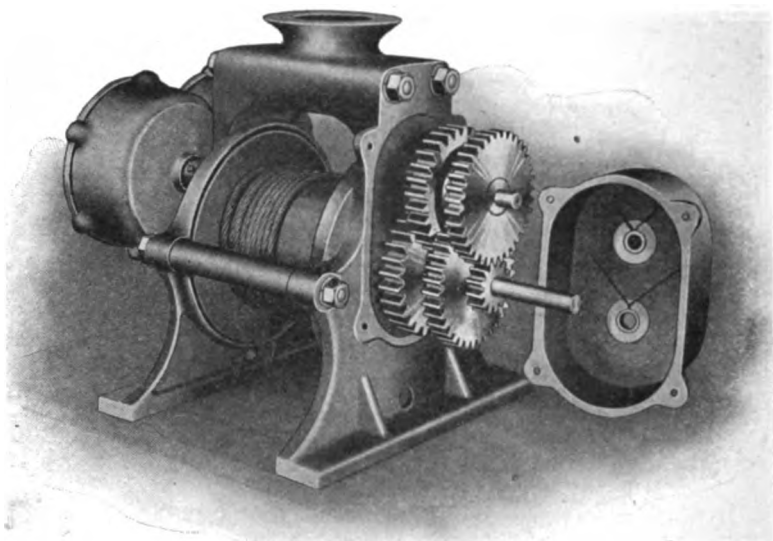
The Chicago Portable Mine Hoist is equipped with an inverted cone similar to that found on rock drill shells, which permits it to be mounted on a $4\frac{1}{2}$ inch double screw column, just as a rock drill is mounted. When bolted to a timber it may be used as a stationary hoist or

it can be bolted to a truck and moved from place to place as needed. All the working parts are enclosed and it will stand lots of abuse.

When used intelligently it will be found useful for an endless number of purposes and will pay for itself in a short time. Its bulk is small, and it can be so placed that it is out of everybody's way whether set up in drive, stope or shaft.

The Chicago Portable Mine Hoist operates by a Reversible Two-Cylinder Pneumatic Motor through a chain of gears cut from solid steel and hardened. This gearing is so designed that a brake is unnecessary. It instantly and positively locks, whether in raising or lowering the load, the moment the motor stops, and it is impossible for the load to slip even though the air is cut off for a whole day. A brake could not be more positive.

The Chicago Portable Mine Hoist will



Enclosed Gearing of Chicago Portable Mine Hoist

coil 200 feet of $\frac{1}{8}$ inch wire rope and hoist 650 pounds at a rope speed of 90 feet per minute. This we guarantee it to do with 80 pounds air pressure, but as a matter of fact we test each one with much heavier loads. It will be noted in this connection that the Hoist is so designed that the rope cannot possibly run off the drum, which is a most desirable feature from an operator's point of view.

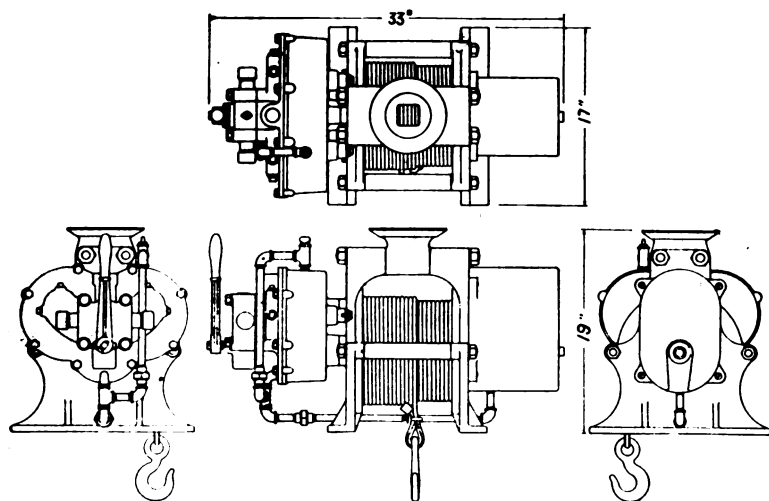
It will be noted that the gears are incased in a closed box, which not only protects the teeth but also insures the careless operator against personal injury and permits of the Automatic Lubrication with which the Hoist is provided.

The motor consists of Two Double Acting Oscillating Cylinders set at right angles in a closed case. There is no movable valve mechanism, as the oscillation of the cylinders opens and closes the ports. A quantity of oil is kept in the case, so that the crank in revolving lubricates itself and dashes the oil on the cylinder seats, from which the air carries it through the inlet ports in sufficient quantities to thoroughly lubricate the pistons.

The air is controlled by a slide valve, which closes when in the central position and starts or reverses the Motor as it may be thrown to the right or left. The valve is thrown by a lever. When this lever is released by the operator the valve is self-closing. This automatic action of the valve positively eliminates all danger of the Hoist creeping and doing damage due to a slight displacement of the valve, since it is necessary to hold the valve open in order to admit any air to the cylinder.

The cylinders are bored true, and automatically adjustable to their valve-seats, the adjustment being simple and made from the outside of the motor case. The piston rods are ground. The stuffing boxes are ample and contain sufficient packing for long wear. All bearings are bronze bushed. The material used throughout is the best obtainable. Superior workmanship is in evidence.

The oiling system on the Chicago Portable Mine Hoist is of exceptional merit. It is automatic and continuous so long as the Hoist is in operation. The oil passes from the motor casing through the bearings to the gear box, from which point it is returned again to



Outline Drawing of Chicago Portable Mine Hoist

the motor-casing. There is no waste and yet every part is most thoroughly lubricated.

Then, too, being of the double-cylinder type, with cranks set at 90° , the Chica-

go Portable Mine Hoist has no dead center and therefore cannot be stalled. It responds instantly the moment air is admitted to the Motor to either raise or lower the load.

Specifications of Chicago Portable Mine Hoist

Type of Hoist	- - - - -	Double Cylinder.
Diameter of Cylinders	- - - - -	$2\frac{1}{2}$ inches.
Length of Stroke	- - - - -	$2\frac{1}{4}$ inches.
Horse Power	- - - - -	2 H. P.
Free air used per foot of lift at sea level	- - - - -	1 cubic foot.
Air Inlet	- - - - -	1 inch.
Weight lifted vertically with 80 lbs. air pressure	- - - - -	650 pounds.
Rope speed per minute with full load	- - - - -	90 feet.
Diameter of rope recommended	- - - - -	$\frac{5}{8}$ inch.
Quantity of $\frac{5}{8}$ " rope drum with coil	- - - - -	200 feet.
Net weight of Hoist without wire rope	- - - - -	300 pounds.
Over all dimensions—Length	- - - - -	33 inches.
Width	- - - - -	17 inches.
Height	- - - - -	19 inches.
Ratio of gearing	- - - - -	17 to 1.
Drum diameter and width	- - - - -	6x8 inches.
Depth of flange	- - - - -	$2\frac{1}{8}$ inches.
With 200 feet $\frac{5}{8}$ " wire rope	- - - - -	
Code word	- - - - -	Acerta.
With 200 feet $\frac{5}{8}$ " wire rope and a $4\frac{1}{2}$ "x6' double screw column with arm and clamp	- - - - -	
Code word	- - - - -	Acervix.

Prices on application. Send for Bulletin 149.

Duntley Electric Drills and Grinders

Universal Electric Drills

Patented Feb. 18, 1913.

For connection to ordinary lamp socket.

Operating on either direct or alternating current (of 60 cycles or less) single phase, interchangeably.

Cut shows the smallest and lightest electric drill built which will operate on either current. We build seven sizes of drills of this type as follows:

Size No.	Capacity in metal	inch
000.	"	$\frac{1}{4}$
00.	"	$\frac{3}{8}$
0.	"	$\frac{1}{2}$
1.	"	$\frac{3}{4}$
2.	"	$\frac{7}{8}$
3.	"	$1\frac{1}{4}$



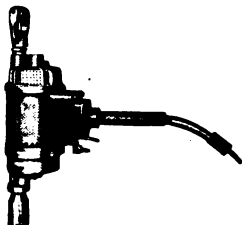
Size No. 0.
Capacity $\frac{3}{8}$ inch in metal

Heavy Duty Direct Current Electric Drills

For 110 and 220 volts.

Built in five sizes as follows:

Size No.	Capacity in metal	inch
0.	"	$\frac{3}{8}$
1.	"	$\frac{1}{2}$
2.	"	$\frac{3}{4}$
3.	"	$1\frac{1}{4}$
3x.	"	$1\frac{1}{2}$
4. (Comp.)	"	$1\frac{3}{4}$
4x.	"	$2\frac{1}{4}$
5. (Comp.)	"	$2\frac{1}{2}$



Size No. 0 S-S

The No. 3, 4 and 4x can be furnished in the center spindle as well as the side spindle style.

The No. 3x, 4 Compensated, 4x and 5 Compensated are especially adapted for high speed reaming.

Heavy Duty Alternating Current Electric Drills

For two and three phase.

For connecting to two or three phase power lines. Cannot be operated from lamp socket. Built in five sizes as follows:

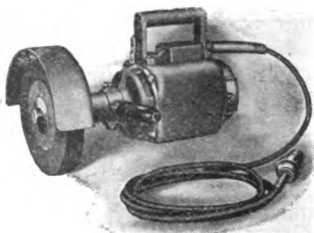
Furnished in the side spindle style only. Standard windings are for 60 cycles, 110 or 220 volts. Size Nos. 2, 3 and 4 can be wound for 440 volts.	Size No.	Capacity in metal	inch.
	1.	"	$\frac{1}{2}$
	2.	"	$\frac{3}{4}$
	3.	"	$1\frac{1}{4}$
	4.	"	2

Electric Grinders

For use in the foundry, machine and structural shop. Built in two sizes for 110-220-600 volts direct current, and 110-220 volts two or three phase alternating current.

Size No. 5 BP carries $5\frac{1}{2}$ inch wheel
" " 8 B? " $6\frac{1}{4}$ " "

Universal Grinders can be furnished in three sizes to operate on either direct current or alternating current, interchangeably from an ordinary lamp socket.



Size No. 8 BP Portable Grinder

CHICAGO PNEUMATIC TOOL CO.

1014 Fisher Building, CHICAGO

Branches Everywhere

52 Vanderbilt Ave., NEW YORK

Care of Duntley Electric Drills.

It is of vital importance to have portable drills in first-class operating condition at all times and this can be accomplished by the exercise of a little care and attention on the part of the operators. When the customer's plant is provided with a toolroom, it is desirable to have the tools sent there occasionally to be looked over and if necessary put in the best possible condition.

It is to be expected that natural wear of the bearings and brushes will take place; therefore, these points should occasionally be looked after.

In order to assist in the care of electric drills the following suggestions may be of benefit:

Lubrication: The gears of Duntley electric drills are intended to run in grease and an opening in the gear case is provided for the insertion of grease. We recommend the application of two or three tablespoonfuls of high-grade non-fluid oil to the gears every two or three weeks, when the drills are in constant operation. Every two months the gear case should be removed, the old grease cleaned out and a liberal quantity of fresh grease applied around the gears.

The revolving journals do not require a large amount of oil at any one time, as the lubricating chambers are of ample capacity to hold a considerable supply, but in order that these chambers may not be permitted to become empty it is desirable to make a practice of applying a small quantity of a good grade of light lubricating oil each day. Oil cups communicating with the lubricating chambers will be found on the commutator bonnet and on the gear case. The chamber on the gear case takes care of the oil supply for the spindle bearing, lower armature bearing and lower intermediate gear bearing. The upper intermediate gear bearing is oiled from a lubricant chamber in the transfer plate, between the gear case and motor housing. An oil screw will be found in this transfer plate, which it is necessary to remove in order to apply the oil.

Commutator and Brushes: Commutator and brushes should be examined occasionally to see that excessive wear is not taking place on either part. Removable enclosing covers permit the brushes and commutator to be examined without difficulty. The commutator should be kept fairly clean and the brushes should not be permitted to wear too short. The brush holders are provided with springs of the cock-spring type, which give a uniform pressure through a wide range so that no adjustment is required after leaving the factory. The brush holders are carefully set in position for proper commutation and should not be tampered with. Use No. 00 sandpaper in cleaning the commutator; never use emery cloth.

Ventilation: When the drills are being examined it is a good plan to clean out the air holes in the housing and enclosing covers. These should be cleaned from the inside, if possible, so as to remove the dirt instead of pushing it into the machine.

Switch: The switch furnished with the Duntley drill is of the quick-acting type and should be cleaned occasionally. The switch mechanism, which is located in the pipe handle of the switch, requires a small amount of oil at very long intervals.

Cable: Do not permit your men to drag the drills around by the cable.

Feed Screws: Do not use feed screws other than those furnished by this company. A longer feed screw is apt to cause trouble by being screwed down too far and cutting into the windings.

It will well repay you to follow the above suggestions.

The Modern Family Dines.

The Son—"Hey, shoot the juice."

The Father—"Cut out that slang, please."

The Mother—"That's a peach of a way to correct the kid."

The Father—"I only wanted to put him wise. Such talk will queer him."

The Son—"Ishgabibble."

IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air
and Electrical Appliances

BY THE

IDEAL POWER PUBLISHING CO.
1014 FISHER BUILDING
CHICAGO, U. S. A.

C. I. HENRIKSON

Editor

Vol. 11

JULY, 1915

No. 7

TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year
Other Countries in Postal Union, 50 cents per year

ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our
subscription list.

Little Giant Chosen as Official Truck for Lincoln Highway Coast-to-Coast Caravan.

The Little Giant truck was recently chosen as the official truck to accompany the Lincoln Highway Automobile Caravan which left New York on May 15th, passed through Chicago Heights on July 2nd and which expects to reach San Francisco on August 19th. The Little Giant left Chicago on July 7th and will overtake the caravan at Omaha.

Le Roy Beardsley, Jr., and Earl C. Phillips have charge of the truck which is to be used as a tender to the automobile party for carrying baggage and the moving picture paraphernalia. Mr. Phillips has recently come from Australia where he represented the Little Giant Truck Department of the Chicago Pneumatic Tool Co.

The caravan consists of four cars with the following passengers:

H. C. Osterman and wife.

O. P. Canaday and wife.

Edw. G. Holden.

R. C. Sackett.

T. A. Stalker.

Leon Loeb.

R. W. Reiling.

Mr. Osterman is head consul of the Lincoln Highway Association.

Altogether 414 towns will be visited and moving pictures of 65 of them will be taken en route, the object of the expedition being to give publicity to the

beauties and the practicability of the Lincoln Highway, and arrangements have been made with the leading moving picture concerns to run these films all over the country.

The Little Giant truck is fitted with Prairie Schooner top and is decorated with emblems of the Lincoln Highway Association and is well equipped and prepared for the long and strenuous journey before it.

It is equipped with a Stewart Speedometer and two Stewart Warning Signals furnished by the Stewart-Warner Speedometer Corporation; two Pyrene fire extinguishers furnished by the Pyrene Co.; a Prest-o-Lite tank furnished by the Prest-o-Lite Co., and a set of Firestone tires by the Firestone Tire & Rubber Co.

Special Little Giant Truck Supplement

Did you get a copy of the Special Truck Supplement issued in connection with this July issue? If not, send for it. It goes into motor trucking quite thoroughly, shows practically every style of body that has ever been built, and gives the experiences of many users. If you are not interested in an auto truck now, you will be some day and a perusal of this supplement now may give you something to think about and may guide you in the right direction. Your copy is awaiting receipt of your request for it.

Our Language.

The intricacies of our language are well illustrated in the definition given of a sleeper.

A sleeper is one who sleeps. A sleeper is that in which the sleeper sleeps. A sleeper is that on which the sleeper runs while the sleeper sleeps. Therefore, while the sleeper sleeps in the sleeper under the sleeper the sleeper carries the sleeper over the sleeper under the sleeper until the sleeper which carries the sleeper jumps the sleeper and wakes the sleeper in the sleeper by striking the sleeper on the sleeper, and there is no longer any sleeper in the sleeper on the sleeper.

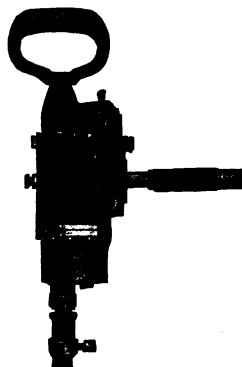
Boring Wood With Air

In a pneumatic wood boring machine the object is to get minimum weight in a reversible air motor that will successfully handle the standard wood boring bits that are now on the market.

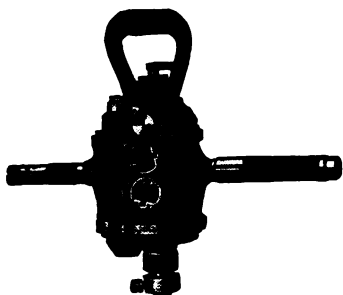


No. 10S Little Giant Wood Boring Machine, Capacity $\frac{3}{4}$ in.

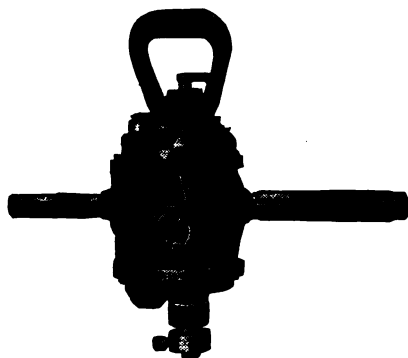
**Little Giant
Wood Boring
Machines
Meet These
Conditions**



No. 3 Improved Little Giant Wood Boring Machine, Capacity 1 in.



No. 5 Improved Little Giant Reversible Wood Boring Machine, Capacity 2 in.



No. 14 Improved Little Giant Reversible Wood Boring Machine, Capacity 4 in.

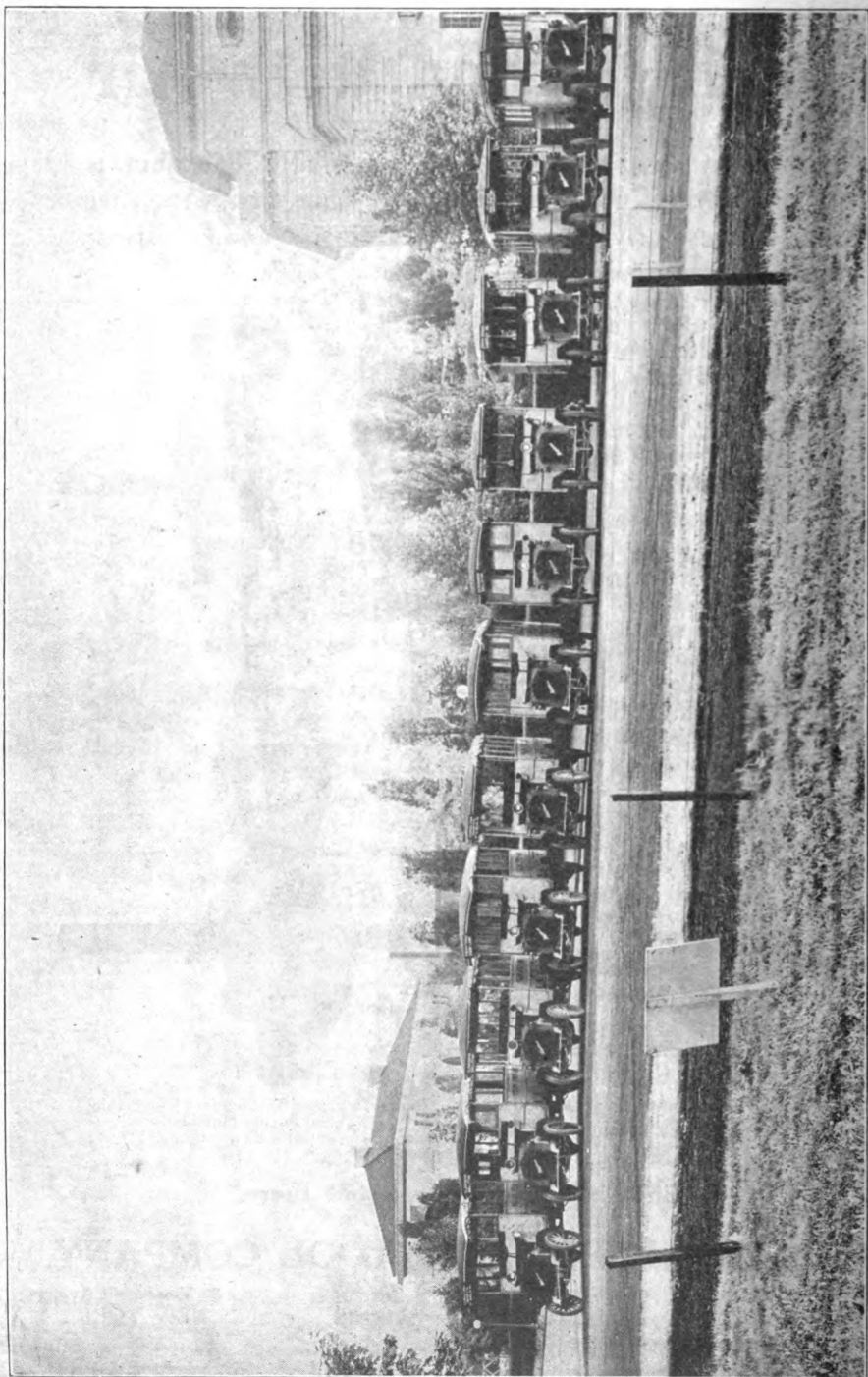
Bulletin 127 tells all about these.

CHICAGO PNEUMATIC TOOL COMPANY

1014 Fisher Building
CHICAGO

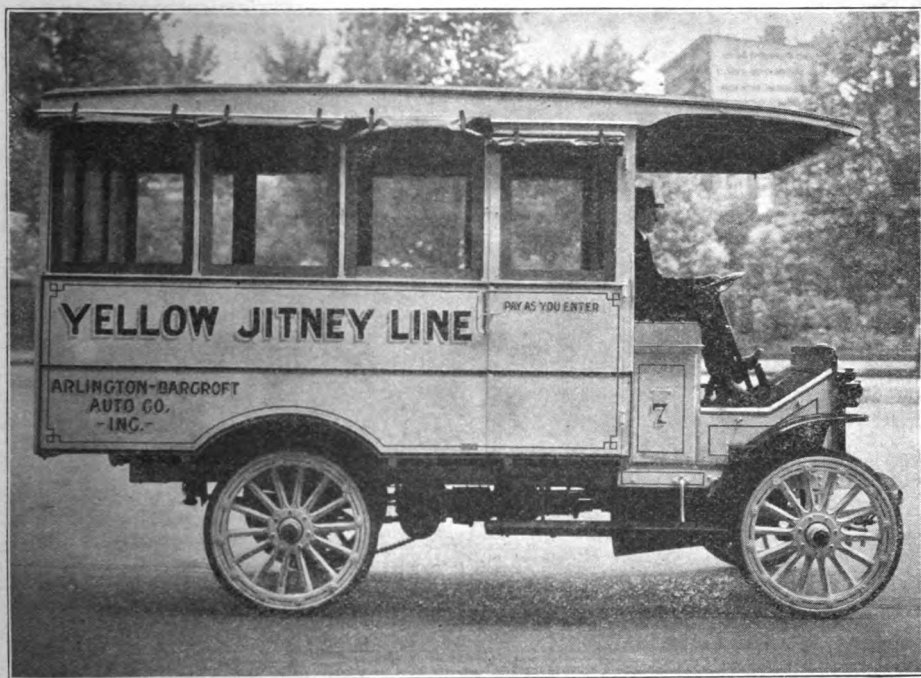
BRANCHES EVERYWHERE

52 Vanderbilt Ave.
NEW YORK

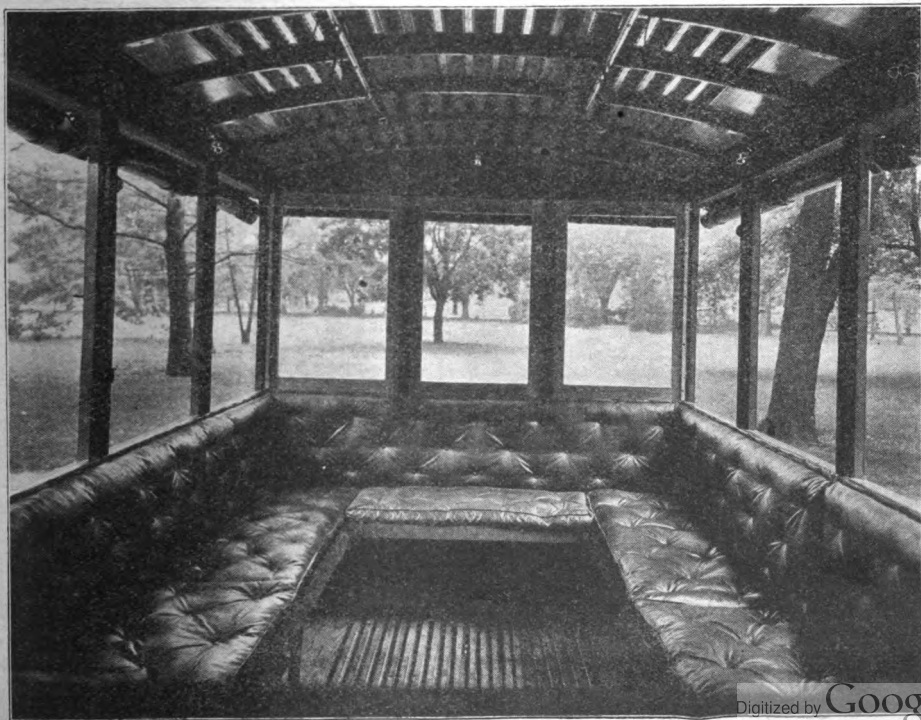


THE LITTLE GIANT "YELLOW JITNEY" FLEET.

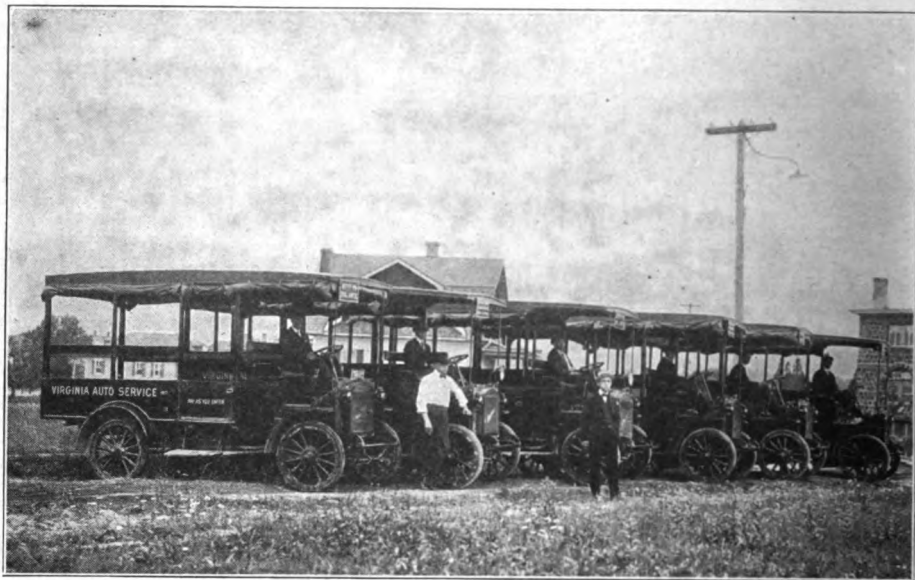
Showing eleven of a fleet of "Little Giant" Trucks which have been sold to the Arlington-Barcroft Auto Co., of Washington, D. C., by the Chicago Pneumatic Tool Co. They are all exactly alike, have very attractive bodies and are called "The Yellow Jitney Line." Sixteen Little Giant Trucks are now in service with that one line in Washington and twelve more have just been sold, making a fleet of twenty-eight trucks.



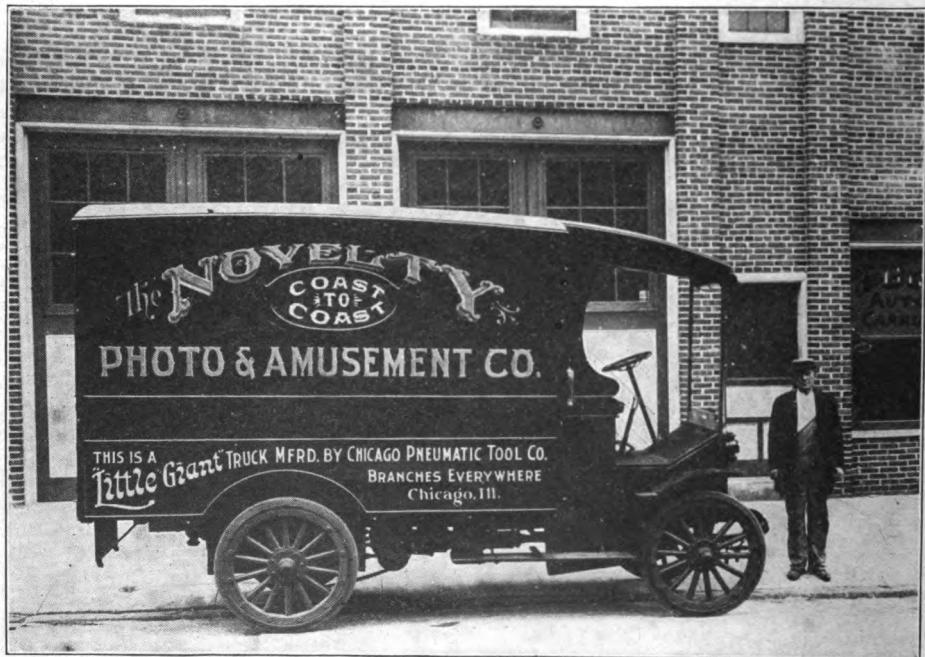
Showing side view of one of the "Yellow Jitney" Fleet of twenty-eight, owned by the Arlington-Barcroft Auto Co., Washington, D. C.



Showing interior of "Yellow Jitney" Bus. No lack of comfort here, and good enough



Six Little Giants Doing Jitney Service for the Virginia Auto Service Co., Washington, D. C.
Six Additional Trucks Have Just Been Ordered.



This truck started out from Philadelphia and is taking moving pictures all the way to the Panama-Pacific Exposition at San Francisco. The films will be shown later in practically all of the moving picture theatres in the United States.



Showing how the Little Giant Six Wheeler Handles a Big Load of Long Lumber

The New Little Giant of Six Wheel Construction

Industries having bulky or long but light loads to transport, frequently fail to realize the expected economies of motor truck transportation owing to the very limited loading space which the ordinary chassis affords. In the ordinary four wheel truck the power is applied through its traction wheels and motor truck practice is to place the entire load or the greater portion of it directly over or slightly forward of the traction wheels. The traction wheels must therefore both carry and push the load.

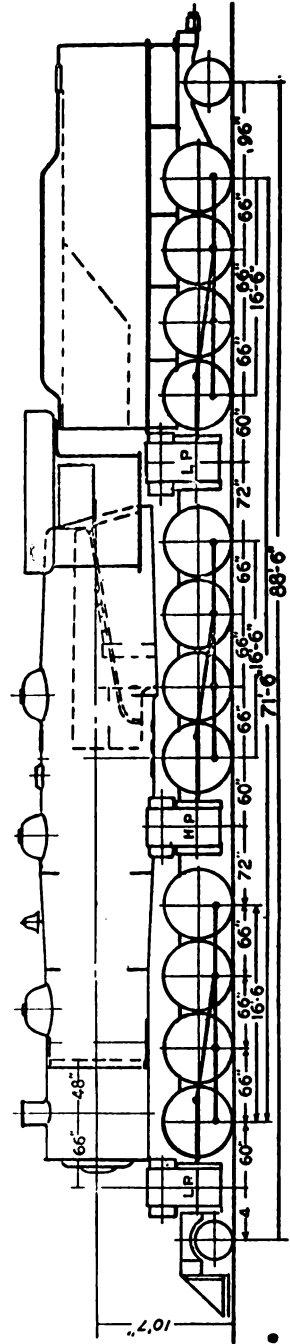
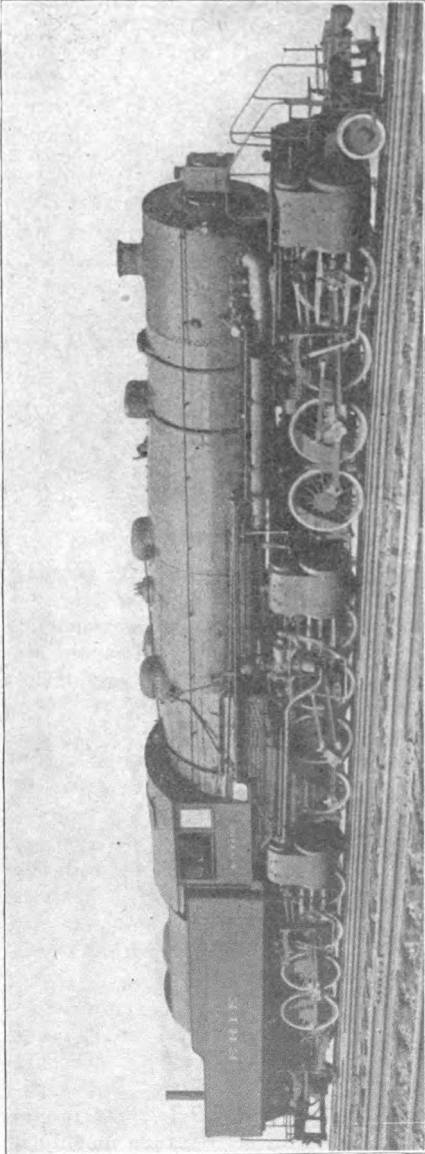
In the Little Giant Six Wheel Truck these objections are overcome. The power of the motor is utilized to draw the load instead of carrying it and pushing it, with the result that efficiency of the power unit is doubled. In the Six Wheel construction only sufficient of the load is placed upon the chassis of the truck to secure proper traction. But the weight so imposed is not rigidly fastened to the chassis but rests upon a ball race making it a live or floating load. This

feature naturally relieves the running gear and engine from the shock and strain which a load ordinarily transmits to a truck as a result of the constant vibration due to irregularities of roadbed, and also affords relief from strain in starting and stopping. This relief from the shock and strain is so great that the life of the motor is naturally increased and has even been doubled.

In the Little Giant Six Wheel Construction, the rear wheels absolutely track and the driver need have no more concern for the movement and guidance of the load than in ordinary four wheel construction.

The Little Giant Six Wheel Construction is of such a nature that anyone owning a Little Giant truck can purchase the additional outfit with all the apparatus necessary to complete the arrangement and easily apply it, thus making it possible by doubling the load space of the truck to double its carrying capacity.

Correspondence concerning the Little Giant Six Wheel Truck should be directed to the Motor Truck Department, 1470 Michigan Ave., Chicago.



New Erie Mallet Compound

The cuts on the adjoining page illustrate the latest development of powerful freight locomotives, namely, the six-cylinder type articulated Mallet compound, a specimen of which will be placed in service on the Erie Railroad, says the Erie Railroad Employees Magazine.

Its total weight with tender is 410 tons, and it has greater tractive power than any engine ever built.

It is unique in that it will utilize the large weight of its tender to furnish adhesion for the third set of drivers. It has been, generally, the practice to carry the dead weight of the tender without deriving any power from it. When it is considered that a loaded tender weighs more than half as much as the engine itself, it can be seen that considerable power is required to haul the tender and that a great advantage should result from putting drivers under it; at least from a standpoint of tractive power per total weight of engine and tender.

The locomotive is being designed and will be built by the Baldwin Locomotive Works, Philadelphia, and will have the following general dimensions:

Tractive power, 160,000 lbs.; size of cylinders (3 sets), 36 in. x 32 in.; diameter of drivers, 63 in.; driving journals, 11 in. x $13\frac{1}{8}$ in.; firebox (radial stay type), 162 in. x 108 in.; flues, $5\frac{1}{2}$ in., 53; tubes $2\frac{1}{4}$ in., 318; length of flues and tubes, 24 ft. 0 in.; weight on engine truck, 30,000 lbs.; weight on engine drivers, 480,000 lbs.; weight on tender drivers, 260,000 lbs.; weight on trailer, 50,000 lbs.; total weight, engine and tender, 820,000 lbs.; heating surface, firebox 310 sq. ft.; heating surface flues, 1,825 sq. ft.; heat surface, tubes, 4,480 sq. ft.; heating surface, arch tubes, 40 sq. ft.; heating surface, combustion chamber 95 sq. ft.; total heating surface, 6,750 sq. ft.; heating surface of superheater, 1,530 sq. ft.; grate area, 90 sq. ft.; water capacity of tender, 10,000 gals.; coal capacity of tender, 16 tons.

The locomotive will be equipped with a Street Stoker, and will have the Baker

valve gear and Schmidt superheater. Being a radical departure from other designs of locomotives, its service will be watched with keen interest.

This monster engine will be called "Matt H. Shay," in honor of a retired engineer on the Mahoning Division of the Erie, a faithful and loyal employe and as trustworthy an engineer as ever guided a train.

A Business Man.

Congressman Brown, of the Oyster Bay District in New York, was speaking of the Jewish instinct for striking a bargain and during the conversation told this story:

"Jacobs and Bernheim were joint partners in the woolen cloth business, Jacobs being the Eastern salesman for the firm. While traveling in the East he was taken ill and died. The undertaker who took charge of the body wired Bernheim: 'Jacobs died, can embalm him for fifty dollars, or freeze him for twenty-five dollars.'

"Bernheim wired back: 'Freeze him from his knees up for fifteen dollars; his legs vere frost-bitten last vinter.'"

By way of enlarging the children's vocabulary, our village school teacher is in the habit of giving them a certain word and asking them to form a sentence in which that word occurs. The other day she gave the class the word "notwithstanding." There was a pause, and then a bright-faced youngster held up his hand.

"Well, what is your sentence, Tommy?" asked the teacher.

"Father wore his trousers out, but notwithstanding."

"I suppose," said the sympathetic neighbor, "that you will erect a handsome monument to your husband's memory." "To his memory?" echoed the tearful widow. "Why, poor John hadn't any. I was sorting over some of his clothes today and found a pocketful of letters I had given him to post."

Good Management in the Home



is shown by big results without drudgery. Thorough and constant cleanliness of carpets, rugs, draperies and upholstery with least possible time and effort is the ideal of every housewife, and every husband and provider should invest in a

Duntley Electric Cleaner

and make some woman happy.

The Duntley is made in sizes suitable for use in offices, hotels, churches, theatres, large or small homes, cottages or apartments, and for commercial cleaning.

AGENTS WANTED

Some Good Territories Still Open

Duntley Products Sales Company

732 Michigan Ave., CHICAGO

I am in the market for a Duntley Electric Cleaner. Please quote me prices and send descriptive literature.

Name

Address

I am interested in agency proposition for following territory.....



When writing to advertisers please mention Ideal Power.

My Efficiency.

In an organization, as in a chain, the weakest link determines the strength. And the effectiveness or efficiency of the organization depends on the effectiveness of the individuals as well as their fitness to work together. Each one, to be effective, must be personally efficient, and as it is well to test the efficiency of a machine, so is it good to test our own efficiency to determine whether we can improve and where; to take account of stock, and find along what lines should be our effort to expand.

Following are a few leading points for self analysis, suggested by Edward Earle Purinton in *The Independent*. An honest "Yes" would mean 100; an honest "No" 0; a partial credit can be made according to the self judgement of the individual. The sum total of the credits divided by 25 will give your average estimated efficiency.

If you're not satisfied with the average, the credits will indicate where thought and effort can be applied to raise it.

Per Cent

- 1. Is your work agreeable?.....
- 2. Are you doing it in the best, and quickest way?
- 3. Have you found where your greatest power lies?
- 4. Have you a definite aim in the line of this power?
- 5. Are you positive of your own future success?
- 6. Can you look on the bright side, always?
- 7. Do you know how to get well and keep so?
- 8. Do you know what habits and emotions hurt your work?
- 9. Are you correcting your weaknesses?
- 10. Have you taken stock of your strong and weak points of mind and character?
- 11. Do you know what food, exercise and baths are most beneficial?...
- 12. Are deep breathing and an erect body habitual?

- 13. Is your sleep long and refreshing and room well ventilated?
- 14. Are your meals regular and eaten slowly?
- 15. Do you wear loose, comfortable clothing?
- 16. Are you positive and courageous?..
- 17. Are you tactful and courteous?....
- 18. Do you get the co-operation of fellow workers?
- 19. Do you plan your day ahead?
- 20. Do you save money systematically?
- 21. Do you like good music and good reading?
- 22. Have you ambition to be of real service to Humanity?
- 23. Do you seek good advice and helpful associates?
- 24. Is your leisure spent profitably? ...
- 25. Are your relaxations pleasant and helpful?

Club Talk.

He came from St. Louis, and had all the discriminating tastes of a native of that burg. He carefully scrutinized the menu card at the Club endeavoring to find something that was fit to eat, and perfectly proper for a man of his standing to indulge in publicly, when he discovered something that seemed to appeal to him. He looked about anxiously for a waiter, lest in a too extended delay, he might either lose the place on the card, or his appetite for the dish he had selected. "George," he called to the servant that appeared on the scene at that moment, "What are these pan-fried flounders?"

"Why those," answered George, somewhat confusedly, "why those are—why they are flounders, you know,—flounders fried in a pan."

The gentleman from St. Louis looked relieved. "Bring me some," he said, folding up the card, and leaning back in his chair with the air of one who had suddenly acquired a vast accumulation of knowledge.

Give Your Customers Boiler Insurance

YOU WON'T HAVE TO WRITE A POLICY. MERELY STATE ON THE INVOICE: *"The flues in this boiler have been expanded with the Little Giant Flue Expanders, operated by Little Giant Flue Rolling Machines, and beaded with a Boyer Beading Hammer; the tapping has been done, and the staybolts have been run in, with Little Giant Reversible Tapping Machines; the STEAM TIGHT RIVETS have been driven by Boyer Hammers."*



Boyer Riveting Hammer

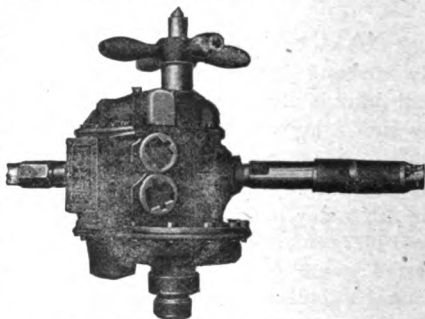
BOYER Riveting Hammers, with the aid of Boyer Holders On, make a specialty of Steam Tight Rivets that DO NOT HAVE TO BE CALKED.

BOYER Chipping Hammers give that steady reliable service day in and day out, that a boiler is expected to give.

BOYER Hammers are subjected to test before shipment, similar to the test you give your boilers, known as our "Power Test." Hammers that do not have the required power or rapidity of blow, and that do not come up to standard in every respect are thrown out. The records of those that pass the test are filed for future reference.

Boilers are tested for the Quantity and Quality of steam generated: for the Horse Power developed; and for the Fuel Consumption required to produce these results.

LITTLE GIANT DRILLS are tested for speed, for their pulling or Horse Power and for Air Consumption. If they do not come up to standard they are rejected. The recent improvements made in these drills made it so easy to pass these tests that we RAISED THE STANDARD, but every LITTLE GIANT DRILL has to "toe the mark."



No. 2 Improved Little Giant Drill

Send for our Pneumatic Tool Bulletins

Chicago Pneumatic Tool Co.

1014 Fisher Building
Chicago

Branches
Everywhere

52 Vanderbilt Ave.
New York

Surprise in Store.

The Old Boy: "Tommy, I'm surprised to see you going about with a black eye."

Tommy: "You'll be more surprised when you get home. Your boy has got two!"

He Would Look a Fool!

Some years ago an Irish farmer went into an ironmonger's shop to purchase a scythe. After serving him the shopman asked him if he would like to buy a bicycle.

"What is that?" asked the farmer.

"It's a machine to ride about the town on."

"And, shure, what might the price be?"

"Ten pounds."

"I'd rather see ten pounds in a cow."

"But what a fool you would look riding about the town on a cow!"

"Shure, now," replied the Irishman, "not half such a fool as I'd look trying to milk a bicycle."

It's Human.

Tell a man that there are 270,169,325,481 stars and he will believe you. But if a sign says "Fresh Paint," he has to make a personal investigation.

Unpromising.

A retail dealer in leather goods, doing business in Baltimore, wrote to a firm in Southern Massachusetts ordering a carload of the merchandise. The firm wired him:

"Cannot ship your order until the last consignment is paid for."

"Unable to wait so long," telegraphed the leather merchant. "Cancel the order."

Experienced.

Miller: "Just as Millet and the widow started up the aisle to the altar every light in the church went out."

Mumford: "What did the couple do then?"

Miller: "Kept on going. The widow knew the way."

Court (to prosecutor)—Then you recognize this handkerchief as the one which was stolen?

Prosecutor—Yes, your honor.

Court—And yet it isn't the only handkerchief of the sort in the world. See, this one I have in my pocket is exactly like it.

Prosecutor—Very likely, your honor; there were two stolen.

A Code System.

"Now, Silas," said the speaker, "I want you to be present when I deliver this speech." "Yassuh." "I want you to start the laughter and applause. Every time I take a drink of water, you applaud, and every time I wipes my forehead with my handkerchief, you laugh." "You better switch dem signals, boss. It's a heap mo' liable to make me laugh to see you standin' up dar deliberately takin' a drink o' water."

Getting Him Started.

"Well, George," said a Georgia man not long ago to an old negro in his employ, relates the Chicago Herald. "I understand that you intend to give your son an education."

"Dat's my intention, suh," responded George. "I know myself what 'tis to struggle along widout learnin', an' I has determined my son ain't goin' to have no sich trouble as I's had."

"Is your son learning rapidly?"

"He shore is, sah. Las' week he done wrote a lettah to his aunt what lives more'n twenty miles from yere, an' aft-while he's goin' to write to his aunt d-t lives 'bout fifty miles from yere."

"Why doesn't he write to that aunt now?" smilingly asked his employer.

"He kain't write so fur yit, sah, He kin write twenty miles fust rate, but I tole him not to try fifty miles 'til he gits strongah wif his pen."



The dollar mark is a sign of wealth.

A dry grin is usually better than two liquid smiles.

When a man has "wheels" he thinks he is the whole machine.

And many a man has discovered that he is married to his boss.

What does it avail a woman to have troubles if she can't tell them?

Customs inspectors are patriotic. They always go where duty calls them.

Sometimes a man's friends will neither make him a loan nor let him alone.

Only a smart man can conceal the fact that he considers himself important.

Don't jeer, it's a game two can play at.

Many a man who is well off is well on in years.

It doesn't take a good looker long to find a husband.

The man who is always celebrating isn't necessarily celebrated.

Many a woman without brains is able to fool a male highbrow.

No candidate is as radical in office as he was during the campaign.

People would rather listen to a bank account than a hard luck story.

Anything that makes a noise like a meal ticket attracts a lot of attention.

Nothing makes a man feel so important as his ability to answer the questions of a small boy.

And many a man in this world expects his friends to do more for him than he is willing to do for himself.

Rather than make an effort to reach the top, some men remain at the bottom and help to pull others down.

If there was any romance connected with it, a girl would sew on her own buttons instead of letting her mother do it.

Some husbands look as if their wives had got them in exchange for trading stamps.

And the man who has all his property in his wife's name can't even call his soul his own.

A man is never so poor that he isn't able to find some woman who is willing to share his poverty.

It is almost impossible for a woman to drive a nail, yet she is usually an expert with the hammer.

A well known lecturer recently married a suffragette and retired from the platform. Now he knows how it feels to be the audience.

It is our belief that a man has just as much right to spend his hard earned money for cigars as his wife has to spend it for face bleach.

The Chicago Pneumatic Tool Co.

MANUFACTURE THE FOLLOWING
PNEUMATIC TOOLS, APPLIANCES, ETC.

After Coolers
 Air Compressors
 Air Economizers
 Air Forge, Chicago
 Air Motors
 Air Receivers
 Air Jacks
 Airolene
 Airolene Grease
 Angle Gears, Little Giant
 Angle Gears, Boyer
 Annealing Machines
 Armour Scaling Machines
 Automatic Oiling Devices
 Bell Ringers, Little Giant
 Blow-off Cocks, Little Giant
 Chucks, Drill
 Chucks, Expanding
 Commercial Car
 Drift Bolt Drivers
 Drills, Boyer
 Drills, Keller
 Drills, Little Giant
 Drills, Rock
 Drilling Stands
 Elevators
 Electric Drills, Duntley
 Electric Grinders, Duntley
 Engineers' Valves
 Flue Cutters, Chicago
 Flue Rollers, and Expanding, Little Giant
 Gas Engines
 Gasoline Driven Compressors
 Gasoline Engines

Grinders, Portable Electric
 Hammers, Riveting
 Hammers, Chipping and Calking
 Hammers, Stone
 Hoists, Duntley Electric
 Hoists, Pneumatic Geared
 Hoists, Straight Lift
 Holders-on
 Hose, Special High Grade
 Hose Clamp Tool
 Hose Couplings (Univ'sal)
 Inter-Coolers
 Magnetic Old Man
 Oil Driven Compressors
 Oil Engines
 Painting Machines
 Pipe Bending Machines
 Pneumatic Saws
 Pneumatic Plate
 Straighteners
 Railway Motor Section Cars
 Reamers
 Reheaters
 Rivet Busters
 Riveters, Jamb
 Riveters, Yoke
 Riveters, Compression
 Sand Rammers
 Sand Sifters
 Speed Recorders
 Staybolt Chucks
 Stone Dressers
 Staybolt Nippers
 Vacuum Pumps
 Winches, Portable

The "Little Giant"[®]

IN VIRGINIA

Is living up to its ideal of reliability



A LITTLE G'ANT in the service of the Lemon Kola Sales Agency Co., Inc., Roanoke, Va.

This picture was taken July 9th, 1915, after the truck had covered 3,200 miles in about two months, over the mountains of Virginia in 30 miles radius of Roanoke, Va.

It averaged about ten miles to gallon of gasoline and negotiated nearly all the grades on Blue Ridge without using low gear.

The management is loud in praise of the truck.

It was sold through F. B. Henretta, Little Giant Agent at Roanoke.

Little Giants are making good everywhere and we solicit the opportunity to quote you and give you any required information.

CHICAGO PNEUMATIC TOOL CO.

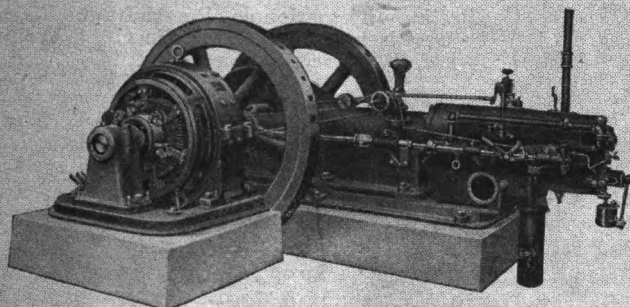
1014 Fisher Building, Chicago

Branches
Everywhere

52 Vanderbilt Ave., New York

Digitized by Google

IDEAL POWER



GIANT OIL ENGINE DIRECT CONNECTED TO GENERATOR
 Regulation guaranteed within 3 per cent. variation. Also furnished with
 belt drive. Write for details and prices.

PUBLISHED MONTHLY BY

Chicago Pneumatic Tool Company

CHICAGO

NEW YORK

Digitized by Google

Chicago Pneumatic Tool Company

Chicago Office, Fisher Bldg.

Eastern Office, No. 52 Vanderbilt Ave.

CHICAGO

NEW YORK

BRANCH OFFICES

Boston: 185 Pleasant Street
 Birmingham: 834 Brown-Marx Bldg.
 Buffalo: 503 Ellicott Square Bldg.
 Cincinnati: 1008 Mercantile Lib. Bdg.
 Cleveland: 1241 E. 49th St.
 Cleveland: 2122 Euclid Ave.
 Detroit: 2nd Ave. and Amsterdam St.
 El Paso: 303 San Francisco St.
 Erie, Pennsylvania
 Franklin, Pennsylvania
 Los Angeles: 241-243 S. Los Angeles St.
 Louisville, Ky.: 31 Todd Bldg.
 Philadelphia: 1740-42 Market St.
 Pittsburgh: 10 and 12 Wood St.
 Portland, Ore.: 46-48 Front St.
 Richmond, Va.: 1004 Mutual Bldg.
 Salt Lake City: 117-119 W. 2nd South St.
 Seattle: 122 King St.
 Spokane: Cor. R. R. and Wall St.
 St. Louis: 813-19 Hempstead St.
 St. Paul: Pioneer Bldg.
 San Francisco: 71 First St.

FOREIGN

Canada: { Montreal, **Canadian Pneumatic Tool Co.**

The Holden Co., Ltd., Montreal, Toronto, Winnipeg.

British Columbia: Vancouver, Holden Co., Ltd., 429 Pendar St.

Mexico: Mexico City, The General Supply Co., Av. Isabel La Catolica, No. 51.

Northern Mexico: (Sonora and Chihuahua), Don A. Carpenter & Co., El Paso, Texas.

Great Britain: { London, **The Consolidated Pneumatic Tool Company,**
Spain: { Ltd., 9, Bridge Street, Westminster, S. W.
Portugal: {

France: Paris, Anciens Etablissement, Glaenzer & Perreaud, 18-20 Faubourg du Temple.

Belgium: Brussels, The Consolidated Pneumatic Tool Co., Ltd., 22 Chaussée de Forest, Porte de Hal.

Italy: Milan, The Consolidated Pneumatic Tool Co., Ltd., via A. Cappellini 7.

Germany:

Austria Hungary:

Balkan States:

Norway:

Sweden:

Holland:

Switzerland:

Denmark:

Berlin, **Internationale Pressluft & Elektrizitäts-Gesellschaft** m. b. H. Berlin C. 54, Weinmeisterhof, Weinmeisterstrasse No. 14.

Russia: Petrograd; Phoenix Engineering Works Co., Ltd., Polustrovskaya. Quay No. 39.

India: { Bombay, **Consolidated Pneumatic Tool Co., Ltd.**, Rampart Row, Fort.
 Calcutta, The Consolidated Pneumatic Tool Co. Ltd., 8 Lal Bazar St.

Japanese Empire: Tokyo, Osaka, Seoul, Dairen, The F. W. Horne Co.

Philippine Islands: Manila, Frank L. Strong Machinery Co., 64-68 Echague.

Australia: Sydney, Henry W. Peabody & Co.

New Zealand: Wellington, Henry W. Peabody & Co.

South America: Buenos Aires, Argentina, Evans, Thornton & Co.

South Africa: { Johannesburg, The Consolidated Pneumatic Tool Co.,
 Ltd., 3 and 9 Cullinan Buildings.

BULLETIN DIRECTORY

Requests for these bulletins should be directed to our Chicago or New York offices or to our nearest branch as shown on inside front cover.

PNEUMATIC TOOLS

- 121...Pneumatic Rammers and Foundry Appliances.
- 124...Pneumatic Riveting, Chipping, Calking and Stone Hammers.
- 125...Pneumatic Yoke, Jam and Shell Riveters, Holders-on, Drift Bolt Drivers, Rivet Busters.
- 126...Compression Riveters.
- 127...Pneumatic Drills, Corner Drills, Reamers, Wood Bore, Flue Rolling and Tapping Machinery and Grinders.
- 128...Miscellaneous equipment for Pneumatic Drills, viz: Chucks, Twist Drills, Reamers, Augers, Flue Cutters, Flue Expanders, Angle Gears.
- 129...Hose, Hose Couplings and Hose Clamp Tools.
- 130...Lubrication of Pneumatic Tools.
- 131...Miscellaneous Tools, viz: Pipe Benders, Air Forge, Bolt Nipper, Drilling Stands, Blow-off Cocks, Bell Ringers, Drill Repair Vises, Painting Machines.
- 132...Pneumatic Motors and Pneumatic Geared Hoists.
- 133...Cylinder Air Hoists and Jacks.

ELECTRIC TOOLS

- E-22...Heavy Duty Electric Drills, Alternating Current.
- E-25...Electric Hoists.
- E-31...Duntley Electric Drilling Stands.
- E-32...Duntley Track Drills.
- E-33...Heavy Duty Electric Drills, Direct Current.
- E-34...Duntley Electric Hammer Drill.
- E-35...Duntley Universal Electric Drills
- E-36...Duntley Electric Grinders.

AIR COMPRESSORS AND FUEL OIL ENGINES

- 34-A...Class "G" Steam Driven "Chicago Pneumatic" Compressors.
- 34-B... "Chicago Pneumatic" Power Driven Compressors.
- 34-C... "Chicago Pneumatic" Gasoline and Fuel Oil Engine Driven Compressors.
- 34-D... "Chicago Pneumatic" Corliss Compressors, Steam Driven.
- 34-F...Design and Construction Class "G" "Chicago Pneumatic" Compressors.
- 34-G...Air Receivers, Aftercoolers, Reheaters, etc.

- 34-H...General Instructions for Installing and Operating "Chicago Pneumatic" Compressors.
- 34-I...Instructions for Installing and Operating N-SS and N-SB Compressors.
- 34-K...Class N-SO and N-SG Fuel Oil and Gas Driven Compressors.
- 34-L...General Pneumatic Engineering Information.
- 34-M...Class "O" "Chicago Pneumatic" Steam and Power Driven Compressors.
- 34-N...Class N-SS and N-SB Single Enclosed Compressors.
- 34-O...Instructions for the Installation and Care of "Chicago Pneumatic" Gasoline Driven Air Compressors.
- 34-P...Class M-CB and M-CE New Enclosed Type Self-Oiling "Chicago Pneumatic" Power Driven Compressors.
- 34-R...Class L-SS and L-SB New Enclosed Type Self-Oiling "Chicago Pneumatic" Compressors.
- 34-S...Small Power Driven Compressors.
- 34-T...Class "M" Corliss Enclosed Type Self-Oiling Four Valve "Chicago Pneumatic" Steam Driven Compressors.
- 34-U...Instructions for Installing and Operating Class N-SO Fuel Oil Compressors.
- 34-W...Class A-O Fuel Oil Engines.
- 34-X...Class A-G Gas and Gasoline Engines.

ROCK DRILLS AND HAND DRILLS

- 148...Chicago Valveless Hand Drills.
- 149...Chicago Portable Mine Hoist.
- 150...Chicago Coal Drills.
- 151...Chicago Slogger Rock Drills.
- 152...Chicago Gatling Drills.
- 153...Chicago Sinker.
- 154...Chicago Stoper.
- 172...Chicago Plug and Feather Drill.
- 216...Hummer Hammer Drills.

LITTLE GIANT TRUCK

Special Ideal Power Supplement.

ROCKFORD and MISCELLANEOUS

- 42...Boyer Speed Recorder.
- 43...Rockford Railway Motor Car.
- 117...Lubrication of Rockford Cars.
- 119...Operation of Rockford Cars.
- 166...Boyer Speed Recorder with Clock Attachment.

CHICAGO PNEUMATIC TOOL CO.

1014 Fisher Bldg., CHICAGO

Branches Everywhere

52 Vanderbilt Ave., NEW YORK

CONVENTIONS.

Aug. 17, 1915—International Railroad Master Blacksmiths' Ass'n at Philadelphia.
Sept. 14-16, 1915—Roadmasters' and Maintenance of Way Ass'n at Chicago.

Sept. 14-17, 1915—Railway Signal Ass'n at Salt Lake City, Utah.

October, 1915—Ass'n of Railway Elec. Engineers.
October, 1915—American Electric Railway Ass'n at San Francisco.

October, 1915—American Electric Railway Manufacturers' Ass'n at San Francisco.

Oct. 19-21, 1915—Maintenance of Way Master Painters' Ass'n U. S. & Canada at St. Louis.

Oct. 19-21, 1915—American Railway Bridge and Building Ass'n at Hotel Statler, Detroit, Mich.

Nov. 18-19—Ohio Society of Mechanical, Electrical and Steam Engineers at Zanesville, Ohio.

Dec. 7-10, 1915—American Society of Mechanical Engineers at New York.

ENGINEERING SOCIETIES, ETC.

American Association of Railroad Superintendents (General)—General Secretary, E. H. Harmon, St. Louis, Mo. Next meeting, Aug. 19-21, 1915, at San Francisco.

American Concrete Institute—Secretary, Edw. E. Krauss, Harrison Bldg., Philadelphia, Pa.

American Electric Railway Association—Secretary-Treasurer, E. B. Burritt, 8 W. 40th St., New York, N. Y.

American Highway Association—Executive Secretary, I. S. Pennybacker, Colorado Bldg., Washington, D. C.

American Institute of Electrical Engineers—President, John J. Carty, 15 Dey St., New York; Secretary, F. L. Hutchinson, 33 W. 39th St., New York.

American Institute of Mining Engineers—Secretary, Bradley Stoughton, 29 W. 39th St., New York City.

American Mining Congress—Secretary, J. F. Callbreath, Jr., 1021 Munsey Bldg., Washington, D. C.

American Order of Steam Engineers—Supreme Chief Engineer, J. W. Parent, Philadelphia, Pa.; Supreme Corresponding Engineer, Edw. A. Reboul, 1110 Earl St., Philadelphia, Pa.

American Railway Engineering Association—Secretary, E. H. Fritch, 1011 Karpen Bldg., Chicago, Ill.

American Road Builders' Association—Secretary, E. L. Powers, 150 Nassau St., New York.

American Society of Civil Engineers—Secretary, Chas. Warren Hunt, 220 W. 57th St., New York City.

American Society of Engineering Contractors (Inc.)—Secretary, J. R. Wemlinger, South Ferry Bldg., New York City. Meetings: Second Thursday every month.

American Society of Heating and Ventilating Engineers—Secretary, J. J. Blackmore, 29 W. 39th St., New York City.

American Society of Mechanical Engineers—Secretary, Calvin W. Rice, 29 W. 39th St., New York City.

American Society of Naval Engineers—Secretary-Treasurer, Lieut. A. T. Church, U. S. N., Navy Department, Washington, D. C.

American Water Works Association—Secretary, J. M. Diven, 47 State St., Troy, N. Y.

Association of Civil Engineers, Cornell University—President, A. F. Williams, Ithaca, N. Y.; Secretary, A. S. Patrick, Ithaca, N. Y.

Association of Engineering Societies—Chairman Board of Managers, John W. Woermann, 428 Custom House, St. Louis, Mo.; Secretary, Joseph W. Peters, 3817 Olive St., St. Louis, Mo.

Association of Railway Electrical Engineers—Secretary, I. A. Andreucetti, C. & N. W. Ry. Co., Chicago, Ill.

Boston Society of Civil Engineers—Secretary, S. Everett Tinkham, 715 Tremont Temple, Boston, Mass.

Canadian Society of Civil Engineers—Secretary, Clement H. McLeod, 176 Mansfield St., Montreal, Can.

Canadian Railway Club—Secretary, James Powell, Grand Trunk Ry., Montreal, Que.

Central Railway Club—Secretary, H. D. Vought, 95 Liberty St., New York.

Civil Engineers' Society of St. Paul—Secretary, Edw. J. Dugan, Room 7, Old State Capitol Bldg., St. Paul, Minn.

Cleveland Engineering Society—Secretary, David Gaehr, Chamber of Commerce Bldg., Cleveland, Ohio.

Connecticut Society of Civil Engineers—President, C. C. Elwell, New Haven, Conn.; Secretary-Treasurer, J. Frederick Jackson, Box 1304, New Haven, Conn.

Detroit Engineering Society—Secretary-Treasurer, E. M. Walker, 532 M. C. Sta., Detroit, Mich.

Engineering Association of the South—Secretary-Treasurer, W. Harwell Allen, 928 Stahlman Bldg., Nashville, Tenn.

Engineers' Club of Cincinnati—Secretary, E. A. Gast, P. O. Box 333, Cincinnati, Ohio.

Engineers' Club of Minneapolis—President, L. S. Gillette, 74 Chamber of Commerce, Minneapolis, Minn.; Secretary, Louis Clousing, 2411 Oakland Ave., Minneapolis.

Engineers' Club of Philadelphia—Secretary, L. H. Kenney, 1317 Spruce St., Philadelphia, Pa.

Engineers' Club of St. Louis—Secretary, W. W. Horner, 5203 Maple Ave., St. Louis, Mo.

Engineering Society of Purdue University, Lafayette, Ind.—Secretary, C. B. Penrod, 123 State St., W. Lafayette, Ind.

Engineering Society of Buffalo—President, John Younger; Secretary, W. J. Gamble, 295 Ontario St.

Engineers' Society of Pennsylvania—Secretary, E. R. Dasher, 31 S. Front St., Harrisburg, Pa.

Engineers' Society of Northeastern Pennsylvania—Secretary, T. F. McKenna, care of Engineers' Club, Scranton, Pa.

Engineers' Society of Western Pennsylvania—Secretary, Elmer K. Hiles, 2511 Oliver Bldg., Pittsburgh, Pa.

Illinois Society of Engineers and Surveyors—Secretary, E. E. R. Tratman, Wheaton, Ill.

Indiana Engineering Society—Secretary, Chas. Brossmann, Indianapolis, Ind.

International Railway Congress Association—President (of the International Commission) W. Toudelier, 11 Rue de Louvain, Brussels, Belgium; Secretary, General L. Weissenbruch, same address.

Iowa Engineering Society—Secretary-Treasurer, Prof. J. H. Dunlap, Iowa City, Iowa.

Iake Superior Mining Institute—Secretary, A. J. Yunebluth, Ishpeming, Mich.

Louisiana Engineering Society—President, I. C. Datz; Secretary, W. T. Hogg, P. O. Sta. 20, New Orleans, La.

Michigan Engineering Society—President, Delmar E. Feed, Cadillac, Mich.; Secretary, Samuel J. Hoexter, Ann Arbor, Mich.

Montana Society of Engineers—President, Martin H. Gerry, Jr., Helena, Mont.; Secretary, Clinton H. Moore, Butte, Mont.

New England Association of Commercial Engineers—Secretary, F. S. Eggleston, Jr., 53 Devonshire St., Boston, Mass.

New England R. R. Club—Secretary, W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass.

New York Railroad Club—Secretary, Harry D. Vought, 95 Liberty St., New York, N. Y.

Ohio Engineering Society—President, W. F. Schepflin, Fremont, O.; Secretary, Jno. Laylin, Hartman Bldg., Columbus, O.

Ohio Society of Mechanical, Electrical and Steam Engineers—Secretary-Treasurer, Frank E. Sanborn, Ohio State University, Columbus, Ohio.

Railway Club of Pittsburgh—Secretary, J. B. Anderson, Room 207, Penn. R. R. Station, Pittsburgh, Pa.

Richmond Railroad Club—Secretary, F. O. Robinson, C. & O. Railway, Richmond, Va.

Rochester Engineering Society of Rochester—Secretary-Treasurer, F. C. Taylor, 34 Clinton Ave., Rochester, N. Y.

St. Louis Railroad Club—Secretary, B. W. Frauenthal, Union Station, St. Louis, Mo.

Southern & Southwestern Railway Club—Secretary, A. J. Merrill, Grant Bldg., Atlanta, Ga.

Toledo Society of Engineers—President, L. M. Gram, 1047 Spitzer Bldg., Toledo, O.; Secretary, L. T. Owen, 1047 Spitzer Bldg., Toledo, O. Regular meeting, second Friday in each month.

Utah Society of Engineers—Secretary, C. J. Ullrich, 321 Felt Bldg., Salt Lake City, Utah. Third Friday of each month, except July and August.

Vermont Society of Engineers—Secretary, Geo. A. Reed, Barre, Vt.

Western Railway Club—Secretary, J. W. Taylor, 1112 Karpen Bldg., Chicago, Ill.

Western Society of Engineers—President, Wm. B. Jackson, Harris Trust Bldg., Chicago; Secretary, J. H. Warder, 1735 Monadnock Bldg., Chicago.

MECHANICAL AND TRADE SOCIETIES.

Air Brake Association—Secretary, F. M. Nellis, 53 State St., Boston, Mass.

American Boiler Manufacturers' Association—President, W. C. Connelly, Ivanhoe Road and Nickle Plate R. R., Cleveland, O.; Secretary, J. D. Farasev, 37th St. and Erie Ry., Cleveland, O.

American Electric Railway Association—Secretary-Treasurer, E. B. Burritt, 8 W. 40th St., New York City.

American Electric Railway Manufacturers' Association—Secretary-Treasurer, H. G. McConaughy, Suite 1002, 165 Broadway, New York City.

American Foundrymen's Association—Secretary, A. O. Backert, 12th and Chestnut Sts., Cleveland, Ohio.

American Institute of Metals—Secretary-Treasurer, W. M. Corse, 106 Morris Ave., Buffalo, N. Y.

American Railway Association—General Secretary, W. F. Allen, 75 Church St., New York City.

American Railway Bridge and Building Association—President, L. D. Hadwen, C. M. & St. P. Ry., Chicago; Secretary, C. A. Lichty, C. & N. W. Ry., Chicago.

American Railway Master Mechanics' Association—President, E. W. Pratt, A. S. M. P. & M., care of C. & N. W. Ry., Chicago, Ill.; Secretary, J. W. Taylor, Karpen Bldg., Chicago.

American Railway Tool Foremen's Association—Secretary, O. D. Kinsey, Illinois Central R. R., Chicago.

Boiler Makers' Supply Men's Association—Secretary, Geo. Slate, The Boiler Maker, 17 Battery Pl., New York City.

Canadian Association of Stationary Engineers—Secretary, W. A. Crockett, Mount Hamilton, Ont., Can.

Canadian Roadmasters' Association—Secretary, J. M. Mackenzie, West Toronto, Can.

Car Foremen's Association of Chicago—President, Chas. J. Wymer, Gen. For. for Belt Ry. of Chicago; Secretary, Aaron Kline, 841 N. Lawler Ave., Chicago.

General Superintendents' Association of Chicago—Secretary, A. M. Hunter, 321 Grand Central Station, Chicago.

International Railroad Master Blacksmiths' Association—Secretary, A. L. Woodworth, C. H. & D. Ry., Lima, O.

International Railway Fuel Association—C. G. Hall, Secretary, 922 McCormick Bldg., Chicago.

International Railway General Foremen's Association—Secretary-Treasurer, Wm. Hall, C. & N. W. Ry., 1126 W. Broadway, Winona, Minn.

International Union of Steam Engineers—President, Matt Comerford; Secretary-Treasurer, James G. Hannahan, 6334 Yale Ave., Chicago.

Master Boiler Makers' Association—President, Andrew Green, Big Four R. R., Indianapolis, Ind.; Secretary, Harry D. Vought, 95 Liberty St., New York City.

Master Car Builders' Association—President, D. R. McBain, S. M. P., care of N. Y. C. R. R., Cleveland, O.; Secretary, J. W. Taylor, Karpen Bldg., Chicago, Ill.

Master Car and Locomotive Painters' Association—Secretary, A. P. Dane, B. & M. R. R., Reading, Mass.

Maintenance of Way Master Painters' Association—United States and Canada—Secretary, T. I. Goodwin, C. R. I. & P., Eldon, Mo.

National Association of Stationary Engineers—Secretary, Fred W. Raven, 417 S. Dearborn St., Chicago, Ill.

National Founders' Association—Secretary, J. M. Taylor, Room 842, 29 S. La Salle St., Chicago, Ill.

National Railway Appliances Association—Secretary, Bruce V. Crandall, 14 E. Jackson Blvd., Chicago, Ill.

Railway Equipment Manufacturers' Association—President, Wm. S. Furry, Ohio Injector Co., Monadnock Bldg., Chicago; Secretary, F. N. Bard, Parco Brass & Joint Co., 212 W. Illinois St., Chicago, Ill.

Railway Signal Association—President, Thos. S. Stevens, A. T. & S. F. Ry., Topeka, Kans.; Secretary, C. C. Rosenberg, Bethlehem, Pa.

Railway Storekeepers' Association—President, J. G. Stuart, G. S. K., care of C. B. & Q. R. R., Chicago, Ill.; Secretary, J. P. Murphy, Box C, Collinwood, O.

Railway Supply Manufacturers' Association—Secretary-Treasurer, J. D. Conway, 2136 Oliver Bldg., Pittsburgh, Pa.

Roadmasters' and Maintenance of Way Association—Secretary-Treasurer, L. C. Ryan, C. & N. W. Ry., Sterling, Ill.

Supply Men's Association of American Boiler Manufacturers' Association of United States and Canada—President, J. T. Corbett (J. T. Ryerson & Son), Chicago; Secretary, F. B. Slocum (Continental Iron Works), Brooklyn, N. Y.

Traveling Engineers' Association—Secretary, W. O. Thompson, N. Y. C. Car Shops, East Buffalo, N. Y.

Anticipation.

Mrs. Justwed—"Just think of it, dearest one! Twenty-five years from day before yesterday will be our silver anniversary!"

A \$100,000 Typewriter.

A typewriter that is nearly 2,000 times the size of the ordinary machine is one of the novel exhibits at the Panama-Pacific Exposition. While installed principally as an advertisement, this enormous machine also serves another purpose of as great importance, since it is used for writing newspaper bulletins that can be read a block away. This machine, which is 21 feet wide and 15 feet high, is reported to have cost \$100,000. The type are three inches in height and print letters which are spaced two inches apart from center to center. The weight of the carriage is 3,500 pounds, the diameter of the key cup, which is the part of the machine ordinarily pressed by the finger, is seven inches, while the hollow cylinder is large enough for a man to crawl through. For using the machine paper nine feet wide is required.



"CLEVELAND" Bridge Reamers

will take heavy cuts and work under trying conditions

Always Dependable

The Twist Drill Co.

New York

CLEVELAND

Chicago

NECESSITIES

High Grade Rubber Goods

Fire Hose

Reels, Nozzles

Fire Hose Carts

Rubber Cement

P. & W. Rubber Preservative

Rubber Boots

Leather-Soled Rubber Boots

Leather Belting

Upholsterer's Leather

Leather and Silk Fringes

Vestibule Diaphragms

Gimp

Brass Nails

Leather Head Nails

Signal Flags

Bunting

Linoleum

Cab Cushions

Cab Curtains

Track Jacks

Economy Soap Stock

Nut Locks

GUILFORD S. WOOD

Great Northern Building

CHICAGO, ILLINOIS

BURKE ELECTRIC COMPANY

MAIN OFFICE AND WORKS

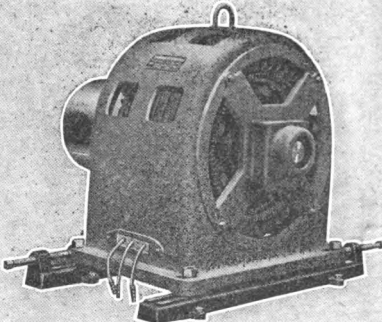
ERIE, PA.

BULLETIN 114

JULY, 1914

POLYPHASE INDUCTION MOTORS

SIZES 1-4 TO 100 H.P.



TYPE 322 INDUCTION MOTOR

This Bulletin

is free on your request. You will be better informed on the construction as well as operation of induction motors if you get it and read it.

BURKE ELECTRIC COMPANY

ERIE,
PA.

BURKE ELECTRIC CO., Erie, Pa.
Please Send Bulletin 114-C
Name.....
Address.....

IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances and Motor Truck
By THE IDEAL POWER PUBLISHING COMPANY
Fisher Building, Chicago

VOL. XI

SEPTEMBER, 1915

No. 9

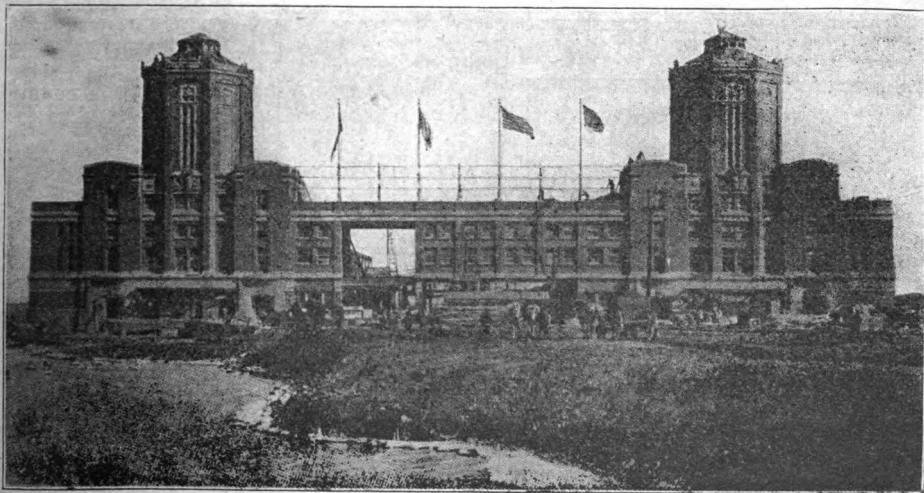
Longest Municipal Pier in the United States is Nearing Completion at Chicago

Structure, 3,000 by 290 Feet, Provides Separate Passenger and Freight Facilities with 660-Foot Recreation Building at Outer End

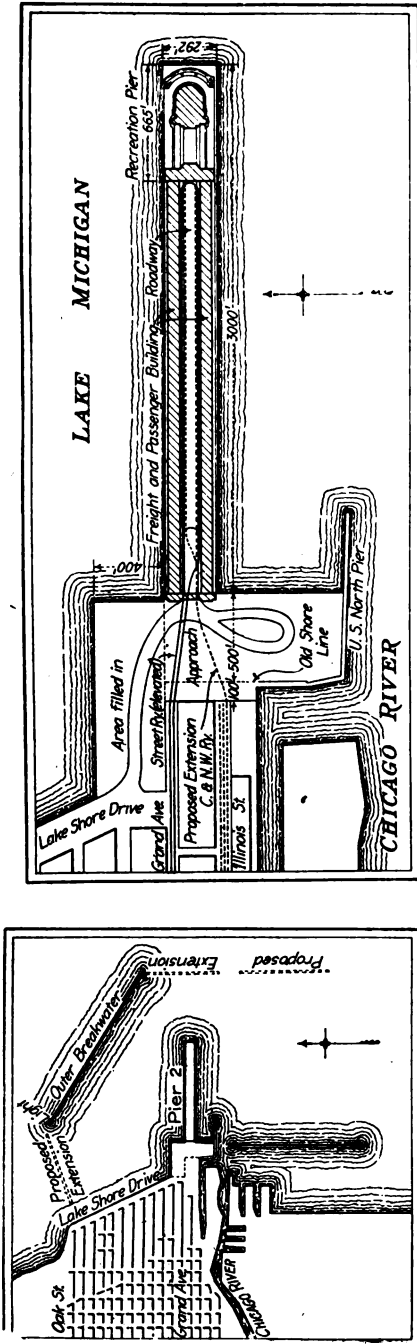
Chicago will soon possess the longest municipal pier in this country. It will be devoted to freight and passenger traffic and recreation. The head house and the freight and passenger buildings are nearly completed and the contract has recently been let for the recreation building. The pier is located 700 feet north of the Chicago river and is No. 2 in the comprehensive outer-harbor plan which Chicago has under way to rehabilitate its fast disappearing lake traffic, says the Engineering Record.

The pier proper is 3,000 feet long and

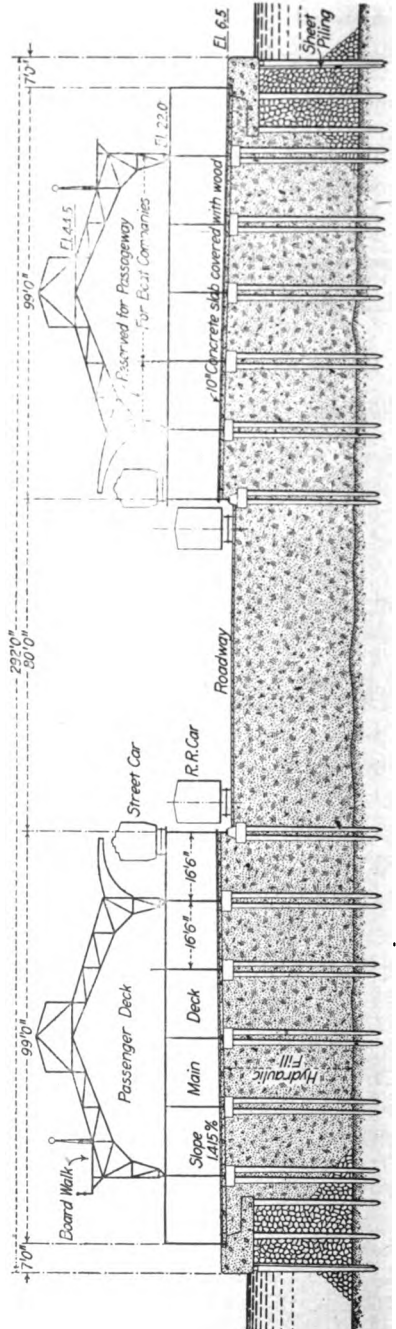
292 feet wide and has for an approach a plaza of approximately 21 acres which were reclaimed from the lake and will be used in the future for commercial purposes in connection with further developments of the comprehensive harbor. The head house is immediately west of the freight sheds, while the extreme easterly, or lakeward, 660 feet of the pier is devoted exclusively to recreation purposes, this being the first application of the recreation-pier idea in Chicago.



Head House is flanked at either end by a massive, octagonal tower.



PIER, LOCATED JUST NORTH OF CHICAGO RIVER, IS 3000 FEET LONG—OUTER END GIVEN OVER TO RECREATION PURPOSES



GENERAL CROSS-SECTION OF ENTIRE PIER—TWO MAIN DOUBLE-DECK PIER SHEDS WITH ROADWAY AND TRACKS BETWEEN

Substructure.

The dock walls consist of three rows of round piles from 50 to 60 ft. long with the outside row supporting Wakefield sheeting. The space between the rows of piles is filled with stone to about 1 ft. below datum (this being approximately the water surface), and on top of this stone fill is built the concrete cap to El. 6.5. The area 256 ft. wide between the dock walls is filled with earth, the greater part of which was deposited by means of an hydraulic dredge working from 200 to 700 ft. from the pier. A large part of the stone was obtained from the spoil banks of the Chicago Drainage Canal and was brought by barges to the site in boxes of 3½-yd. capacity.

The construction of the docks is typical of the Chicago district except that the 12 x 15-in. sheet piling is heavier than used elsewhere, and that the tie rods, or anchorage, were placed 2½ ft. below the water surface. Reinforced-concrete mud sills, 9 x 9 in. in cross-section, were used in place of the usual timber sill. The two outside rows of piles are spaced on 4-ft. centers, while the back row is spaced on 2-ft. centers. Anchor piles in the approach were driven on 8-ft. centers, 30 ft. from the back row.

The inside row was carried ahead of the other two rows, while another pile driver carried along the center and outside rows. The anchor rods for the center and back rows were set at their proper position, after which the front row of piles was lined up and held with temporary anchors. As soon as the sheet piling was driven the permanent anchors were set and the space between the piles filled with stone.

The concrete cap was poured in place in alternate blocks 30 ft. long. All the material was brought to the work on scows and mixed in a floating tower equipment. The amount of concrete placed depended a great deal on the condition of the lake, a slight swell cutting

down the yardage per day materially. On calm days as much as 420 cu. yd., or 120 lin. ft. of the dock, were placed with one mixer.

As it was contemplated to rush the entire work to completion in the shortest space of time possible, the commission decided to carry the superstructure entirely independent of the earth fill, hence pile foundations were designed for all the buildings. It is believed that all known records for speed were broken on this construction, as more than 17,000 piles were driven, 1¼ mi. of concrete dock were constructed and upward of 1,000,000 cu. yd. of earth fill were placed in a period of nine months.

Water Tanks in Head House.

The head house facing the plaza is a steel structure faced with brick, stone and terra cotta, with an ornamental tower near each end. These towers each contain a 60,000-gal. steel tank to supply the sprinkler system in the freight sheds.

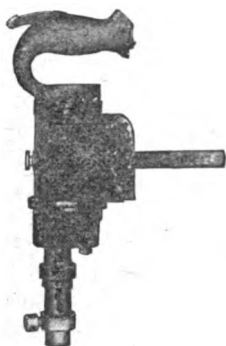
As noted in one of the drawings, the 80-ft. roadway passes between the buildings at the ground-floor level, while the street cars are carried across the plaza on an inclined trestle and pass through the head house and between the other buildings at the second-floor level. Space is reserved for two switch tracks on each side of the roadway. A wide ramp on each side of the roadway leads from the lower level of the head house to the second floor, which is at the same level as the passenger-deck floor of the pier. Access to the upper floors is obtained by means of wide stairways. The heating plant and sprinkler supply pumps are located in rooms on the ground floor, while the rooms above will be devoted to administration offices, toilets and a women's rest room. The vestibule and hallways are wainscoted with white enamel brick to a height of 8 ft., and above this level the walls are plastered. The building is entirely fireproof.

Freight and Passenger Traffic Will Be Separated.

The two freight and passenger build-

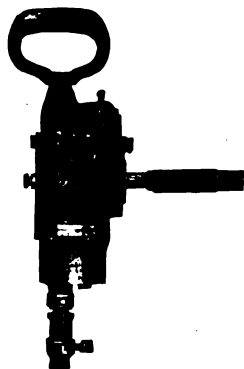
Boring Wood With Air

In a pneumatic wood boring machine the object is to get minimum weight in a reversible air motor that will successfully handle the standard wood boring bits that are now on the market.

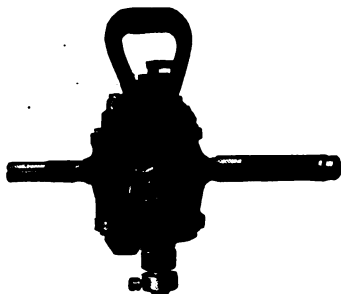


No. 10S Little Giant
Wood Boring Machine,
Capacity $\frac{1}{4}$ in.

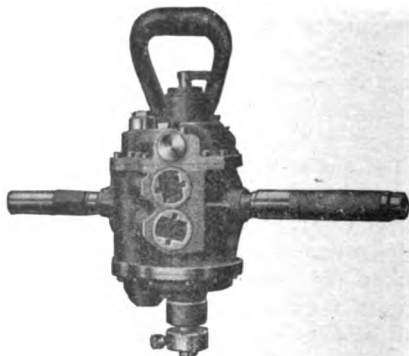
**Little Giant
Wood Boring
Machines
Meet These
Conditions**



No. 3 Improved Little Giant
Wood Boring Machine,
Capacity 1 in.



No. 5 Improved Little Giant Reversible
Wood Boring Machine,
Capacity 2 in.



No. 14 Improved Little Giant Reversible
Wood Boring Machine,
Capacity 4 in.

Bulletin 127 tells all about these.

CHICAGO PNEUMATIC TOOL COMPANY

1014 Fisher Building
CHICAGO

BRANCHES EVERYWHERE

52 Vanderbilt Ave.
NEW YORK

ings are each 100 ft. wide and 2,340 ft. long.

The first-floor beams and slab are of reinforced concrete, while the columns, girders and floorbeams of the second floor are of steel completely fireproofed. The second floor is a reinforced-concrete slab, crowned in the center so as to be easily cleaned by flushing. The wearing surface for the freight dock is creosoted block. The reinforced-concrete roof, covered by five-ply composition roofing, is carried by a three-hinged arch surmounted by a monitor. An 8-ft. board-walk extends along the water side of each truss from the head house on the west to the terminal building on the east. The live loads assumed are 250 lb. per square foot on the first floor, 200 lb. on the passenger deck, 100 lb. on the board walk and 25 lb. on the roof and monitor.

The first floor is to be devoted exclusively to freight, while the second floor will be reserved for passengers who will pass from the main deck of the boats to the street cars, or vice versa, without climbing any stairs. The street-car operation will all be "single-track one way."

Practically the whole upper half of the side walls is of wire glass set in steel sash, thus doing away with insufficiency of light, a common fault of most freight sheds. The sliding steel doors at the freight level are so arranged that one or more can be opened at a time, thus giving practically any amount of clear opening. The doors of the passenger deck are arranged so as to give a 10-ft. clear opening in each bay.

Slabs Deposited Through Roof.

Concrete in the foundations, girders and first-floor slab was deposited at one operation from a traveling tower outfit set up in the main roadway. Two spouts were maintained, one for each building. For the upper floor the spouts were supported on a large platform mounted to operate longitudinally on the roof. A small trestle was mounted on the

platform to run transversely to cover a length of 250 ft. from each setting. Inside the building the concrete was distributed by another rotating chute. The concrete roof slabs were made on the ground and hoisted into place.

Industrial Track.

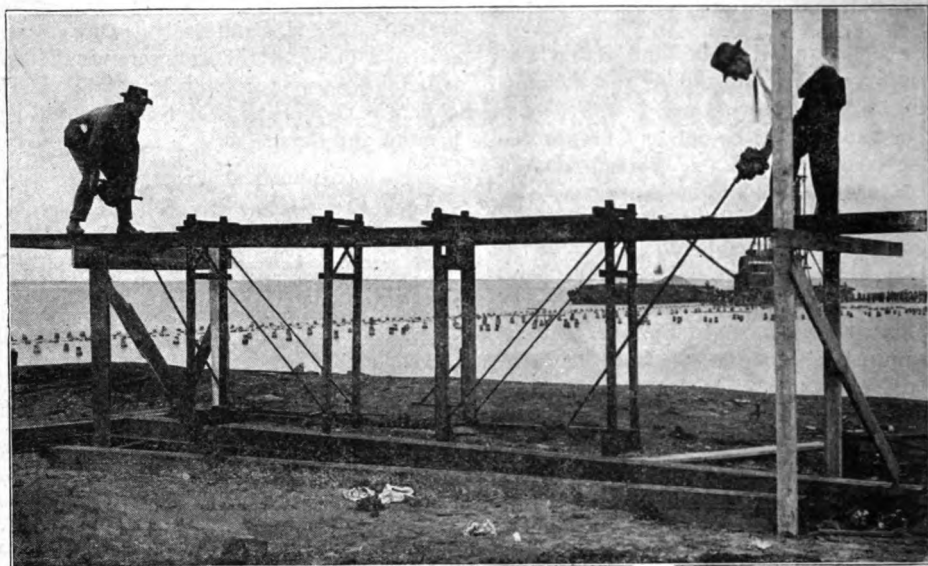
Aggregate for the concrete was delivered in 2-yd. dump cars over an industrial track laid to a sand loading plant on a dock about 1,000 ft. distant, and to standard-gage cars loaded with gravel in Illinois street. The tracks from these two points came together at the very end of Illinois street, and the dinky hauled to the concrete plant the number of sand and gravel cars proportionate to the mixture being used. The cars were unloaded into the elevator boot, the train being pulled along one car-length at a time by a rope drive from a crab on the hoisting engine. The same spotting procedure was used at the sand loading plant. By using these crabs only one dinky was required. When placing the 10-in. slab and heavy girders, from 200 to 300 cu. yd. could be deposited in an eight-hour shift, but from 150 to 180 cu. yd. only could be placed in the 5-in. slab.

Erection of the steelwork was carried out by means of mounted erectors operating 45-ft. booms with a three-drum hoisting engine. The erection of three bays of steel was an ordinary day's work for each erector.

Work has only begun on the recreation building, but the contract calls for completion by Sept. 15th. The three-story structure is 50 x 280 ft. in floor plan and will have a 32 x 280-ft. refectory, an emergency hospital and an auditorium with 4,000 seats removable so that the floor can be used for dancing.

Personnel.

The Great Lakes Dredge & Dock Company was the contractor for the piling, concrete dock and earth filling for both the pier and approach. The Kettler-Elliott Erection Company has the contract for the street railway trestle.



Device used for boring slanting holes for anchor rods under water in constructing the Municipal Pier. Little Giant wood boring machines were used.

tle and the Chaney-Archibald Company built the head house. Edward L. Scheidenhelm is the general contractor for the freight and passenger buildings. The John Griffiths & Son Company holds the contract for the terminal building and Paschen Brothers & Company will construct the recreation buildings.

The design of the substructure was made under the direction of the Harbor & Subway Commission, originally composed of John Ericson, city engineer, J. J. Reynolds and E. C. Shankland. About a year ago the first two of these resigned and were succeeded by the city comptroller and the commissioner of public works. The design for the buildings was carried out under the immediate direction of E. C. Shankland. William Artingstall, harbor engineer, has direct charge of the work and Charles S. Frost is the architect for the commission.

Tools Used.

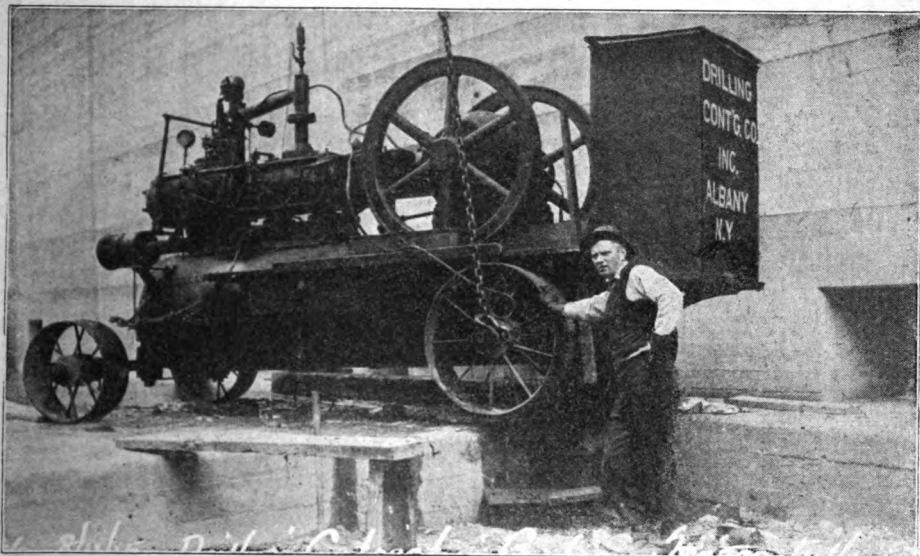
Boyer Hammers and Little Giant Drills have made it possible to construct the Municipal Pier in record-breaking time. Some of the problems confronted

were unique, such as boring slanting holes for anchor rods under water from an oscillating raft. The device used for this purpose consisted of a timber frame, hung at a correct line and grade from two guide-planks. The augers used were driven with Little Giant Wood Boring Machines, made by the Chicago Pneumatic Tool Co. Operators are shown in the photograph standing on the frame to bore the holes, but this was not always done in rough weather. Above the guide blocks the long auger shanks are fitted with a universal joint, so that men could stand on an oscillating raft and keep the machines going even when the waves were quite high. The rods were inserted by men in rubber suits standing on a submerged raft. This was easy because of the accurate boring possible with the frame.

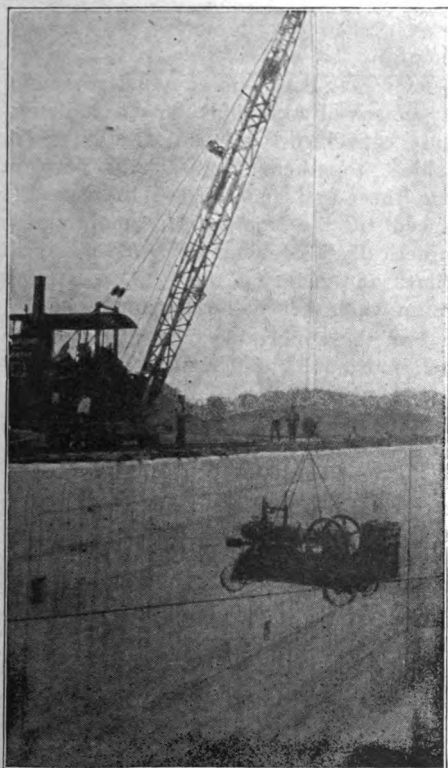
Sounds Nearly Right.

Husband—Is this butter perfectly fresh?

Wife—The dealer told me it was just from the crematory.



A Chicago Pneumatic Portable Compressor operated by the Drilling Contracting Co., Albany, N. Y., in the construction of the Cayuga & Seneca Canal.



Lifting the Compressor with a Browning Crane from Lock No. 3, Cayuga & Seneca Canal.

How the Portable Compressor Meets Engineering Conditions.

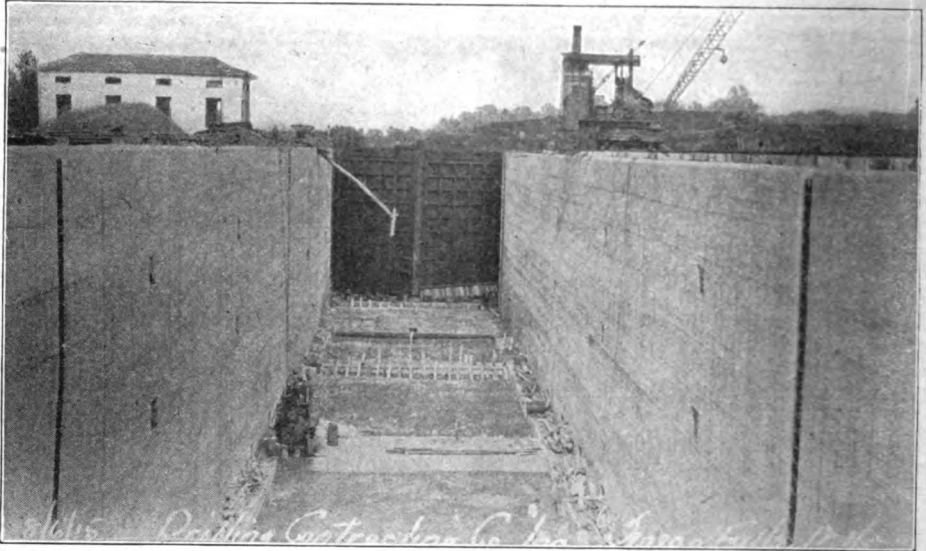
That "Chicago Pneumatic" portable air compressors are continuing to earn well-merited favor and keeping up their enviable reputation for service and efficiency is testified to by the Drilling Contracting Co., of 35 State street, Albany, N. Y., who have kindly sent in some photographs of recent lock building and construction operations, together with the following warm letter of indorsement which they have permitted us to publish:

"We have had it in mind for some time past to write you a letter about the splendid service we have been getting from your 150-ft. Portable Compressor.

"Many well informed persons and engineers have congratulated us on the performance of this machine and have stated that it was the best running and the least troublesome gasoline machine that they had ever seen.

"We have run this machine steadily, at times working twenty-four hours per day, with a ten-minute stop only once in twenty-four hours to examine the journals and wrist pin connections.

As to the portability of this machine an examination of a map of the New York State Barge Canal may interest



Chicago Pneumatic Portable Gasoline Compressor in No. 3 Lock, Cayuga & Seneca Canal.

you when we explain that this machine has been on cars only four times and it has been set up on all of the eight locks below Ft. Edward on the Champlain Canal, on all twenty-two locks of the Erie Canal between Waterford and Oneida Lake; on locks at Fulton, Minnetto and Oswego of the Oswego Canal, and is now working on the four locks on the Cayuga & Seneca Canal.

"The transportation and setting up of this plant has become so much a matter of routine with us that it has been a common occurrence for us to have our drills running fifteen minutes after drawing the compressor to a new site.

"The enclosed photographs show our Browning Crane lifting the Compressor from Lock 3, Cayuga & Seneca Canal, which is one of the four locks on this canal which we are equipping with machinery, gates, etc., at the present time.

"Yours truly.

"DRILLING CONTRACTING CO.,
"Per C. Livingston Riker, Pres."

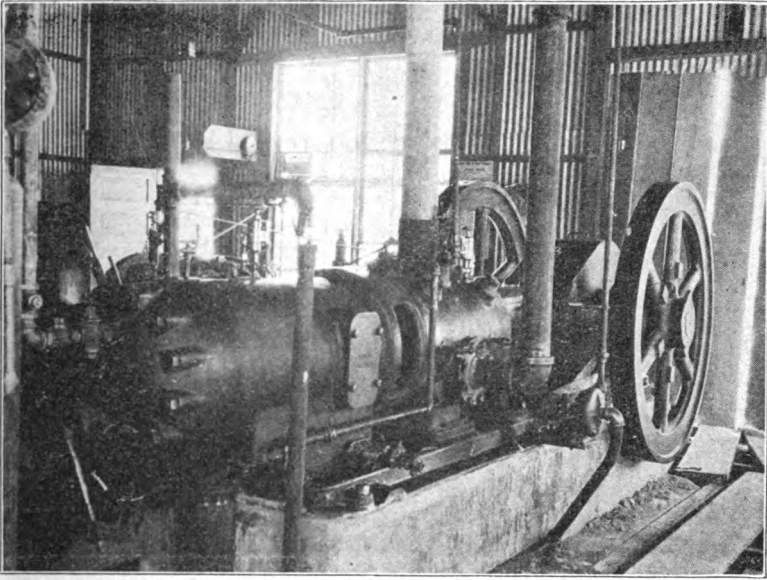
The original and logical design of the Chicago Pneumatic portable tank mounted outfit, in which the combined air receiver and water tank form the support for the compressor, enables the production of a unit possessing a low center of gravity, short wheel base, minimum weight, large air storage capacity and

accessibility for inspection or adjustments.

Close regulation is effectually secured by means of a combined speed and pressure governor and unloading device which, together automatically perform the three-fold function of limiting the speed of the compressor, maintaining practically a constant air pressure at all times and reducing the load to a minimum when there is no demand for air.

For these portable, and also for the semi-portable, compressors there is provided when desired a simple and highly efficient jacket water cooling system, thus making the machines entirely independent of an external source of water supply. This system includes a cooling tower, to the top of which the hot water from the air and gas cylinder jackets is pumped and through which a forced air circulation is maintained by a positive belt driven fan of large capacity. A constant circulation of water is assured while the compressor is in operation by a reliable plunger pump actuated by the air inlet valve eccentric.

Mr. Riker's letter, quoted above re-



A Chicago Pneumatic 14-inch N-SO Fuel Oil Compressor installed at the Tonopah Consolidated Mining Co., Tonopah, Nevada. This machine is run $6\frac{1}{2}$ hours per shift on 15 gallons of 28° gravity distillate, operating at an altitude of about 6,300 feet and carrying a receiver pressure of about 90 pounds.

minds us of the slogan of the Chicago Pneumatic Portable Compressor "Here Today, There Tomorrow and on the job all the time," and proved that the slogan is well chosen.

Situations Wanted.

Practical engineer would like to connect with some large electric railway in the capacity of superintendent of machinery or roadmaster. Has had seven years practical experience with some of the largest electric railways in the West and can furnish references. Has had experience with practically all makes of track and roadway machinery, including Duntley Electric Track Tools. Can handle men. Address Ad-12, Ideal Power.

A mechanical engineer, graduate of the Mass. Inst. of Tech., Boston, class of 1897, wants position as superintendent or works manager in a plant manufacturing iron or steel products. Has had 17 years experience in shop management and is competent to take charge of any

shop, having such departments as boiler, foundry and forge. Address Ad-13, Ideal Power.

Had a Soft Snap.

During the severe weather of last winter Mike and Dennis applied for work at ice harvesting.

"Did you ever cut any ice?" said the man in charge.

"Did we?" said Mike, "sure, ask anyone out around the stock yards and they'll tell ye we're the boys that cut some ice."

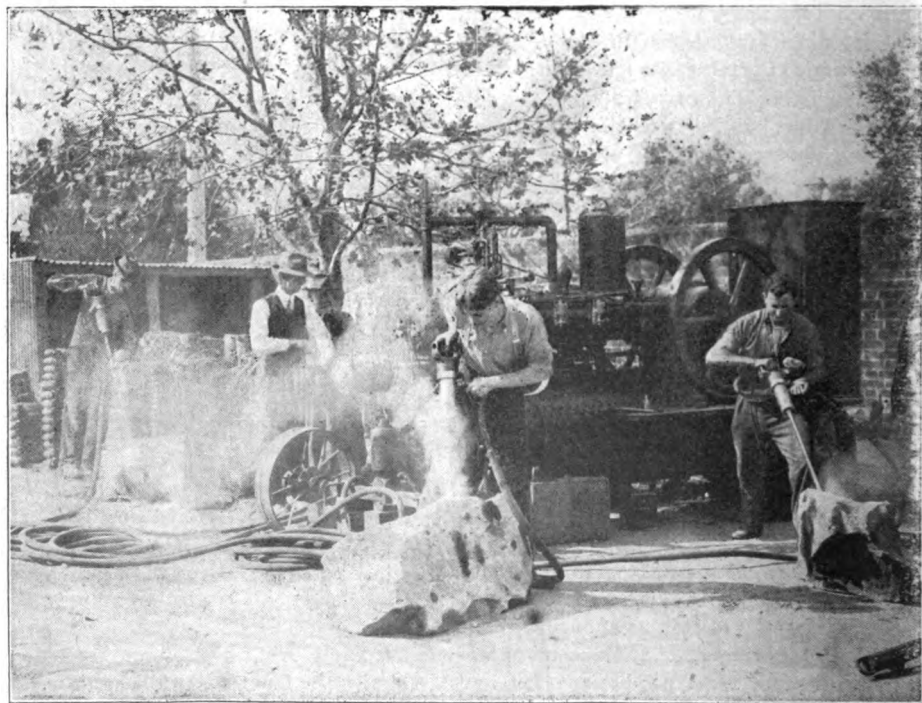
"I don't mean that way," said the man, "but I guess you'll do. Take this" (handing them a crosscut saw) "and go out to where you see the crowd on the lake."

"This is a soft snap we have, Dinny," said Mike as they strolled along. "Three dollars a day and we don't know what we're going to do."

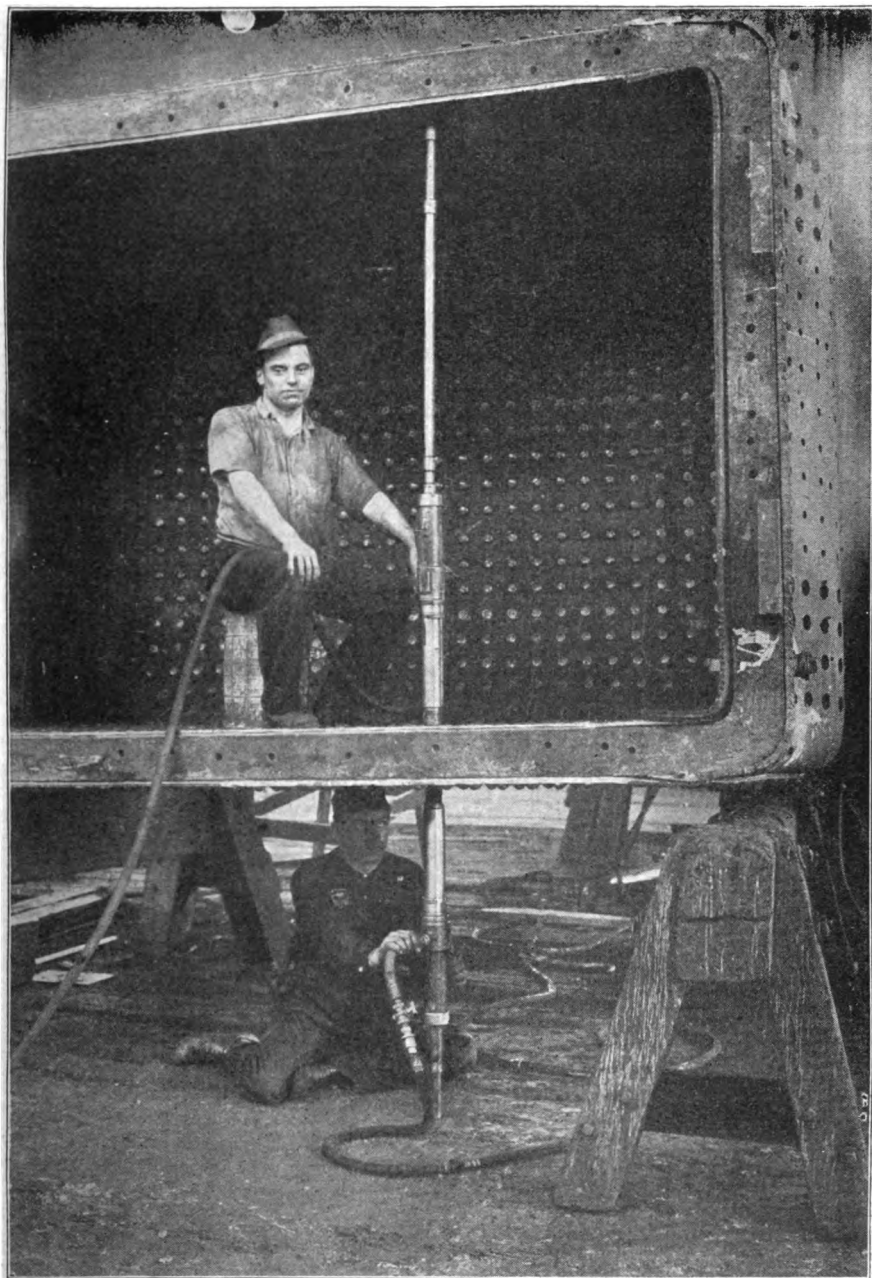
"I know what we're going to do all right," said Dennis, "but what I'm wondering is which one of us is going to get at the bottom end of the saw."



The above illustration shows a "Chicago Pneumatic" Truck Mounted Gasoline Driven Air Compressor operating two "Hammer" Hammer Drills on a recent excavation job at 157th Street and St. Nicholas Avenue, New York City. Amana & Lyons of New York City were the contractors. In the immediate background appears one of the large apartment houses with which this uptown section of the city has been built up.



Showing a "Chicago Pneumatic" Gasoline Driven Air Compressor operating three Keller Valveless Rock Drills. A plant recently purchased by the Public Works Department, Adelaide, South Australia, through Henry W. Peabody & Co., of Sydney—the Australian agents for the Chicago Pneumatic Tool Company.

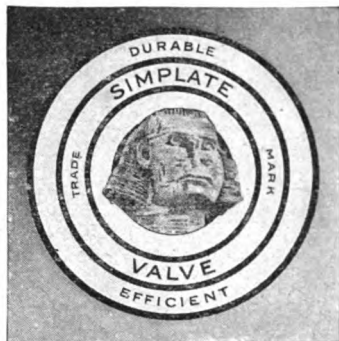


Showing use of No. 80 Boyer Staybolt Riveter in railroad shop. Driving both ends of staybolt at the same time.

With a capacity of one staybolt every five seconds, the No. 80 Boyer Staybolt Riveter makes it possible to speed up on this class of work and many previous records have been broken in shops where it is used.

Standard staybolts run from $\frac{3}{8}$ " to $\frac{11}{8}$ " in diameter, but excellent work has been done by the No. 80 Boyer on staybolts as large as $1\frac{1}{4}$ " and $1\frac{3}{4}$ ".

Prices will be supplied on request.



SIMPLATE DISC VALVES

are used in

"Chicago Pneumatic" Compressors

Durable — Efficient — Noiseless

Send for Bulletin 213, giving
full details

CHICAGO PNEUMATIC TOOL CO.

1014 Fisher Building, Chicago

Branches
Everywhere

52 Vanderbilt Ave., New York

INNER VALVE
ENTIRELY
SEPARATE AND
INDEPENDENT
OF INTERMEDIATE &
OUTER VALVE

LARGE PORTS IN
VALVE KEEPER
MINIMUM RE-
STRICTION TO
THE FLOW OF
THE AIR FROM
VALVE —



METHOD OF GUIDING

VALVE STUD
NUT-A-L-A-M
STANDARD —
WITH SPLIT
PIN COMPLETES
A RIGID CON-
STRUCTION

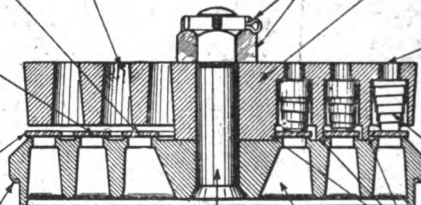
VALVE KEEPER
OF SPECIAL MAT-
ERIAL HAVING
SUPERIOR WEAR-
ING QUALITIES
AND HIGH TENSILE
STRENGTH

INTERMEDIATE VALVE
ENTIRELY
SEPARATE AND
INDEPENDENT
OF INNER AND
OUTER VALVE

SIMPLATE

OPENINGS OVER
SPRING RECESS
INSURE CLEAN
SPRING POCKETS
NO TENDENCY
FOR CARBON DE-
POSIT ON SPRING

OUTER VALVE
ENTIRELY
SEPARATE AND
INDEPENDENT
OF INTERMEDIATE &
INNER VALVE



VOLUTE SPRING
OF CRUCIBLE -
STEEL - DRAWN
AT PROPER TEM-
PERATURE AND
SUBJECTED TO
RIGID COMPRES-
SION TESTS

NARROW SEAT
INSURES A
TIGHT JOINT
IN AIR CYLINDER
WITHOUT THE
USE OF GASKETS

VALVE SEAT OF
SPECIAL
METAL-HAVING
SUPERIOR WEAR-
ING QUALITIES
AND HIGH TEN-
SILE STRENGTH

VALVE STUD
OF NICKEL STEEL
PRESS FIT IN
VALVE SEAT IN-
SURING TIGHT-
NESS AND EASE
OF ASSEMBLING

LARGE FREE
AREA THROUGH
PORTS IN THE
VALVE SEAT
RESISTANCE TO
THE FLOW OF
AIR IS SLIGHT

THREE GUIDES
FOR EACH VALVE
WITH PROPER
FIT TO PREVENT
VALVE COCKING
OR OTHERWISE
FAILING TO SEAT

Advantageous Features of Simplate Valves



Demonstrating the tractive power of the Little Giant Six-Wheel Truck.

What the Six Wheel Truck With Additional Trailer Demonstrates.

In ordinary four wheel truck construction, the power is applied through the traction wheels, over which the greater portion of the load is placed. The traction wheels, therefore, both carry and push the load. The success of the Six Wheel Little Giant is demonstrated by the ease with which the ordinary Little Giant power unit will pull twice the normal load when only sufficient of the load is placed over the driving wheels to secure traction. As further evidence of this, an ordinary wagon loaded to its limit, was attached to the rear of the Six Wheel Little Giant—itsself loaded to the guards—and the entire outfit—practically three times the capacity of the ordinary truck—was handled easily. While this combination of Six Wheel Truck with additional trailer may not be practical nor adapted to ordinary conditions it demonstrates the great tractive power of the Little Giant power unit and

shows that even with the added capacity of the larger Six Wheel Body, there is still a larger reserve of power on which to depend.

Punishment Fitted Crime.

A boy with an air of melancholy resignation went to his teacher and handed in the following note from his mother:

"Dear Sir: Please excuse James for not being present yesterday. He played truant, but you needn't whip him for it, as the boy he played truant with got mad at him and licked him, and a man they threw stones at caught him and licked him, and the driver of a cart they hung on licked him, and the owner of a dog they chased licked him. Then I licked him when he came home; after that his father licked him with a piece of rope and I had to lick him again for being impudent to me for telling his father. So you need not lick him till next time. He thinks he will attend regular in future."

IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air
and Electrical Appliances

BY THE

IDEAL POWER PUBLISHING CO.
1014 FISHER BUILDING
CHICAGO, U. S. A.

C. I. HENRIKSON

Editor

Vol. XI SEPTEMBER, 1915 No. 9

TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year
Other Countries in Postal Union, 50 cents per year

ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our
subscription list.

How the Little Giant Made the Lincoln Highway Trip.

Well, the Little Giant Truck, the official Truck of the Lincoln Highway Coast-to-Coast Caravan along with the rest of the party, reached its destination at San Francisco in excellent shape on August 25th, thus ending one of the most strenuous trips ever undertaken by a motor truck. The Lincoln Highway is a beautiful thing and to the everyday auto fan brings up visions of a delightful journey—of picturesque mountain scenery—of interesting halts by the way, and other refreshing sensations which only an autoist can know and appreciate. But when a well-loaded truck finds it its business to keep up with a flock of speedy pleasure cars bent on making San Francisco by a certain day and a certain hour, well—ask Leroy Beardsley and Earle Phillips, who drove the truck from Chicago to the coast and who had the pleasure of reporting at the Panama-Pacific Exposition at 3 o'clock, "on time," on the day appointed. But the Little Giant made it and did it like a Trojan and incidentally covered itself with glory.

On the arrival of the caravan at Oakland, the Commercial Club of that city gave the party a luncheon, which, after the long drive over the deserts, was thoroughly appreciated. When the Exposition was reached, President Moore

presented the Lincoln Highway travelers with a medal, after which the Little Giant was accorded the unusual honor of being placed temporarily on exhibition in the Transportation Building of the Fair.

The Little Giant had now accomplished all that it had set out to do, but, as there were possibilities of obtaining more laurels, a record run from San Francisco to Los Angeles was undertaken. The distance is 492 miles over continuous mountain roads, and this they made in 29 hours, 30 minutes running time, thus averaging 16 $\frac{2}{3}$ miles per hour. The most remarkable feature of this record trip was the low cost of operation, which totaled \$4.26 or less than one cent per mile. This was due in part to the cheap grade of fuel used, ordinary distillate, and only six (6) gallons of that. Four (4) gallons of Motoreze lubricating oil and seven (7) quarts of water made up the other items.

The Military Training Camp at Fort Sheridan.

A Military Training Camp for business and professional men, to which the Little Giant Truck reported for duty on September 17th, will be held on the military reservation, Fort Sheridan, Illinois, during the period Sept. 20th to Oct. 17th, 1915, inclusive.

The camp will be held under the direct supervision of officers of the United States Army.

The purpose of the camp is to offer an opportunity for business and professional men of military age to qualify themselves for efficient service to the country in case of need.

Attendance at the camp will not increase either the legal or moral obligations of those who attend. The intention is merely to equip those taking the course of training to fulfill with more efficiency and usefulness obligations which are already laid upon them as citizens of the United States.

The success of the Young Men's Sum-



A LITTLE GIANT VOLUNTEER

The Chicago Pneumatic Tool Company's contribution to the Military Training Camp which opens at Fort Sheridan, September 20. A six-wheel Little Giant has also been donated to this service together with the services of two expert truck drivers.

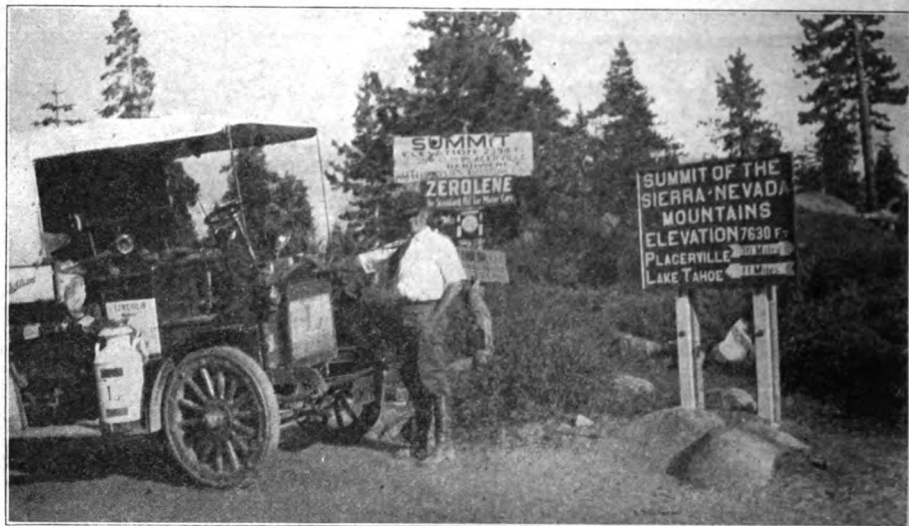
mer Camps for military training which have been in operation for several years has demonstrated the effectiveness of a short and intensive course of military training in qualified educated men to aid in filling the great deficiency in commissioned officers that would immediately arise in case a national emergency required the raising of a large volunteer army. The course of instruction is designed to this end rather than for training for service in the ranks.

In view of the utter lack of a reserve body of officers necessary to organize and command volunteer troops, attendance at the camp is in the opinion of the best military authorities an important and most useful public service.

Course of Instruction.—Instruction will be furnished by officers of the United States Regular Army specially detailed for the purpose. The course will comprise company and battalion drill, the mechanism and use of the mod-

ern military rifle (including target practice), military hygiene, tactics, strategy, etc. Such troops of the regular army as may be available will cooperate in the military instruction and in the different field maneuvers, exercises and demonstrations. These will include exercises in the different arms, including signal and medical corps, the purpose being to furnish the basic training for all branches of the land service which can be supplemented later by specialization according to the preference and qualification of the individual, so as to give to the men opportunities to follow the branches for which they may be best qualified. Maneuvers with regular troops representing the opposing force will be held toward the end of the camp.

Routine.—The mornings will be devoted to a progressive program of instruction in the duties of a soldier, from those of private to company commander. The afternoons will be devoted



THE LITTLE GIANT ON THE LINCOLN HIGHWAY.

This will demonstrate the coolness of the radiator when the elevation of 7,630 feet was reached. Actually climbing 3,000 feet in two and one-half miles.

to more specialized instruction, including courses, among others, in military map making, signalling, military hygiene, etc. In the evenings lectures will be given and discussions held on various military subjects.

Applicants.—Applicants must be citizens of the United States, they must be of good moral character, physically qualified, and must attend for the full period, unless compelled by actual necessity to leave before that time. They must conform to the rules and regulations prescribed for the government of the camp, the commanding officer having authority to discontinue their attendance upon violation of such rules and regulations. Those who have been members of the National Guard or have had other military experience may apply, and on approval may attend for less than the prescribed period. As the military training is progressive, the second and latter part of the camp—from October 1st and October 8th, respectively, is recommended for such men. Men of sufficient experience may be used as officers and noncommissioned officers for the various organizations in the camp.

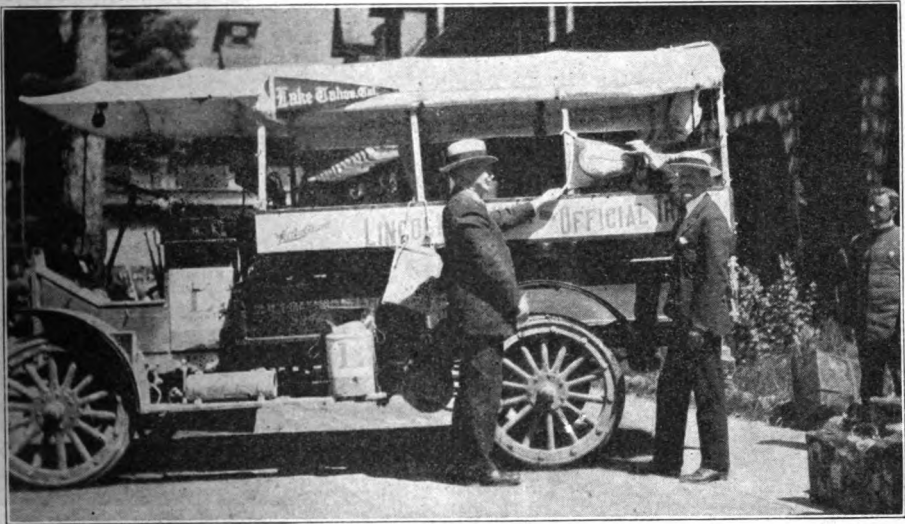
Transportation.—Applicants authorized to attend will be required to pay their traveling expenses to and from the camp.

Subsistence.—Wholesome, healthful and ample meals will be furnished at a rate of about 50 cents a day, which amount is included in the deposit to be made by each approved applicant. This amount will include the payment of cooks, assistants, waiters, etc.

Clothing.—A uniform will be worn by all attending the camp. The following should be provided: one pair of marching shoes, one suit of cotton olive drab uniform, one extra pair of breeches, one campaign hat, two cotton (or wool) olive drab colored shirts, one pair of leggings, medium weight socks, fall underwear.

Besides the above one pair of light shoes, woolen underwear, etc., should be taken to the camp. It is suggested that the following articles will be found useful: raincoat, folding camp chair and electric hand lamp.

The Stetson shoe is recommended, but any good tramping or hunting shoe (broken in) will be satisfactory.



THE LITTLE GIANT ON THE LINCOLN HIGHWAY.

Gentleman on right is Burton Holmes, the celebrated travelogue lecturer, who showed a great deal of interest in the Little Giant Truck at Tahoe Tavern. He was standing here when the moving pictures were taken of the truck loading baggage and leaving the lake.

The uniform articles are similar to those prescribed for the Regular Army. If not possessed, they must be purchased; they will cost from \$8.00 to \$12.00, depending upon quality. All the large clothing firms in Chicago should be able to furnish them.

Civilian clothing, etc., in trunks and suit cases will be properly stored at the post.

Government Equipment.—The Government will provide cots, two blankets (for each man), tentage, cooking outfits, tableware, buckets, basins, mattresses, pillow and pillow slips, bed sheets, also the U. S. Army Infantry equipment, including rifle. Articles of Government property lost or broken will have to be paid for.

Organization.—Attendants at the camp will be divided into organizations commanded by officers of the regular army, whose duties cover not only those of instruction but also the health and general welfare of their commands. In short, everything necessary to the health and tending to the comfort and advance-

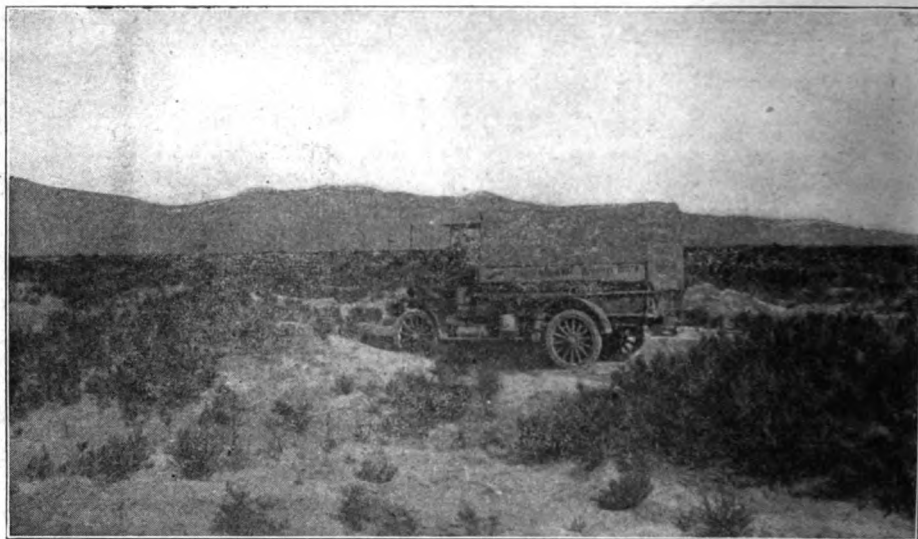
ment of men in attendance which lawfully can be furnished by the War Department will be provided.

Inoculation.—It is advised that those below 45 years of age, who intend to participate in the encampment at Fort Sheridan, take the anti-typhoid vaccination.

Examination.—No examination is required, but a board of regular army officers on duty at the camp will make such recommendations as to individual qualifications as they deem proper, to be filed with the War Department.

Expense.—The total cost, which will be borne by the men attending the camp, including uniform, food and all incidental expense, except traveling expenses, will be about \$40.00 per man during the entire period of the camp. \$25.00 must be deposited with the Financial Officer, upon arrival of each man at the camp, to cover subsistence and camp expenses.

Camp.—The camp is located at Fort Sheridan, on the lake shore, 26 miles north of Chicago.



THE LITTLE GIANT ON THE LINCOLN HIGHWAY.

Six hundred miles of sage brush and desert from Salt Lake City to Reno, Nevada. Water can be had at intervals of 60 to 80 miles;—hard plugging but the truck never failed thru the hard grinds.



THE LITTLE GIANT ON THE LINCOLN HIGHWAY.

In the center of the hard sand desert. Was able to make 28 miles an hour across here.



THE LITTLE GIANT ON THE LINCOLN HIGHWAY.
Corduroy road encountered between Lake Tahoe and Placerville, Calif.

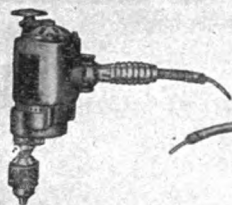


THE LITTLE GIANT ON THE LINCOLN HIGHWAY.

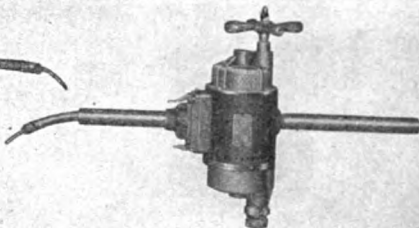
Extending the eastern courtesy to a western motorist, which resulted in four hours of trench digging, between Fallon and Reno, Nevada.

This is the typical soft pulverized sand road which breaks springs on 20 per cent of the cars on account of the hidden holes covered with drifting sand. It is impossible to go more than four or five miles an hour over this kind of road. One of the hurdles on the Lincoln Highway.

Everything in Electric Tools



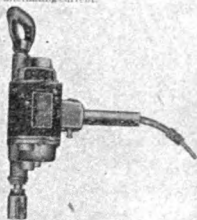
No. 650 Duntley Electric Drill.
Capacity 1/2 inch. Will operate on direct current or single phase alternating current.



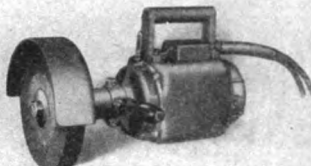
No. 3 SS Duntley Electric Drill.
Has No. 3 Morse Taper socket, designed for heavy duty. Will operate on direct or alternating current.



No. 600 Duntley Electric Drill.
Capacity 1/2 inch. Will operate on direct or single phase alternating current.



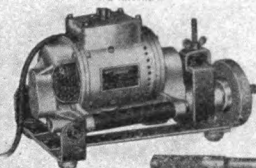
No. 1 SS Duntley Electric Drill.
Capacity 1/2 inch. Will operate on direct or single phase alternating current.



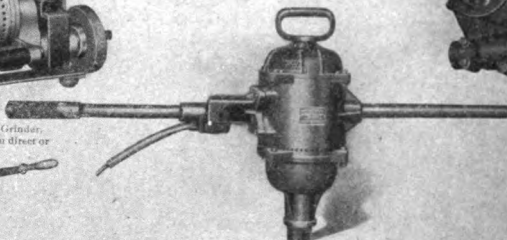
Duntley Electric Grinder.
Built in two sizes for 5 inch and 6 inch emery wheel. Will operate on direct or alternating current.



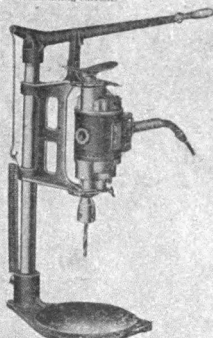
No. 1 Duntley Side Spindle Velminder.
Built in three sizes for 4, 5 and 6 inch emery wheels. Will operate interchangeably on direct or single phase alternating current.



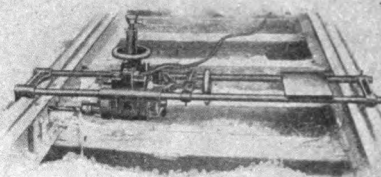
Duntley Portable Surface Grinder.
Built in three sizes to operate on direct or alternating current.



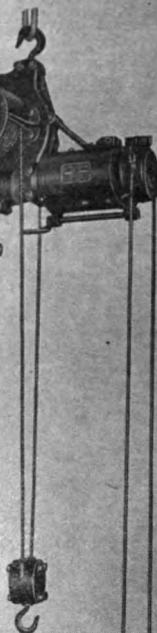
No. 4 Duntley Center Spindle Electric Drill.
Will operate on direct current. Has No. 4 Morse Taper Socket.



Sensitive Drilling Stand for Duntley Electric Drills.
Built in five sizes to take standard Duntley electric drills up to 1/2 inch capacity.



Duntley Electric Track Drill.
Built for rapid work in rail-bonding and for drilling and reaming joint holes. Built in three sizes for 600 volts direct current.



Duntley Portable Electric Hoist.
Built in capacities up to 1 ton. For 110 and 220 volt direct current only.

ASK FOR BULLETINS

Chicago Pneumatic Tool Co.

1014 Fisher Bldg., Chicago

Branches
Everywhere

52 Vanderbilt Ave., New York

When writing to advertisers please mention Ideal Power.

Digitized by Google

Everything in Pneumatic Tools

Boyer Drill.
Made in steel built.
Capacity 1/2 inch.

Boyer Riveting Hammer with Chisel.
The chisel is held in place with a safety device which prevents shooting out of chisel position. Well adapted for cutting out rivets.

No. 1 Improved Little Giant Grinder.
For general and heavy work. Speed light, 500 RPM.

Boyer Chipping and Chasing Hammer.
Made in many sizes and styles to adapt it to a wide range of work.

Boyer Drill.
RPM, reversible or 1/2 inch.

No. 10 Little Giant Grinder.
For light work, speed light, 400 RPM.

Boyer Riveting Hammer.
Made in capacities for driving up to 1/2 inch rivets.

Boyer Hammer, Fitted with Safety Device.
The safety device is furnished when required and effectively prevents the slipping out of piston or rivet set.

Boyer Giant Drill.
Reversible or non-reversible.

Improved Little Giant Reversible Wood Boring Machine.
Capacity, No. 12 holes No. 11-1 inches.

14 x 6 Boyer Jam Riveter.
Adapted for a wide range of work. Will drive 1/2 inch rivets in 1/4 inch space.

Boyer Reversible Machine.
No. 2 inches.

14 x 2 Boyer Jam Riveter.
Adapted for work in tight quarters. Will drive 1/2 inch rivets in 1/4 inch space.

No. 15 Little Giant Reversible Boring and Tapping Machine.
The drill is fitted with both compound and internal Boring and is the most powerful pneumatic Boring Machine.

Boyer Riveting Hammer with Forged Handle.
Adapted for work in tight quarters. Same capacity as standard riveting hammer.

Boyer Pneumatic Holder-on.
For holding up rivets.

Boyer Chisel Driven Corner Drill.
Will drill within 1/2 inches of end wall or corner.

ASK FOR BULLETINS

Chicago Pneumatic Tool Co.

1014 Fisher Bldg., Chicago

Branches
Everywhere

52 Vanderbilt Ave., New York

When writing to advertisers please mention Ideal Power.

Digitized by Google

After Inventory

We find ourselves overstocked on various items of raw material as listed below and solicit inquiries for prices which we are sure will be attractive.

VALVES.

50 1½"	Brass Angle Valves.	150 ¾"	Brass Angle Valves.
25 1"	Brass Angle Valves.	200 ¾"	Brass Angle Valves.
150 ¾"	Brass Angle Valves.	50 2"	Brass Angle Valves.
5 7"	Iron Body Crane Angle Valves, (Flanged Type.)		
2 7"	Iron Body E. C. & B. Angle Valves, (Flanged Type.)		
100 ¾"	Brass Globe Valves.	50 1½"	Brass Globe Valves.
25 ¾"	Brass Globe Valves.	15 2"	Brass Globe Valves.
100 1"	Brass Globe Valves.		
16 3"	Screwed Type Kelley and Jones Globe Valves, (Iron Body.)		
2 2"	Flanged Crane Globe Valves, (Iron Body.)		
2 2"	Flanged W. T. Co. Globe Valves, (Iron Body.)		
1 3"	Flanged Powell Globe Valves, (Iron Body.)		
1 3"	Flanged Crane Globe Valves, (Iron Body.)		
10 3"	Flanged W. T. Co. Globe Valves, (Iron Body.)		
1 3½"	Flanged W. T. Co. Globe Valves, (Iron Body.)		
5 4"	Flanged W. T. Co. Globe Valves, (Iron Body.)		
6 7"	Flanged Jenkins Globe Valves, (Iron Body.)		

UNLOADERS.

16 2"	Globe Unloaders.	6 2"	Richards I. and P. Unloaders.
2 3"	Globe Unloaders.	3 3"	Richards I. and P. Unloaders.
5 4"	Globe Unloaders.	7 3½"	Richards I. and P. Unloaders.
2 4½"	Globe Unloaders.	2 4"	Richards I. and P. Unloaders.
3 3"	Angle Unloaders.	3 4½"	Richards I. and P. Unloaders.

TUBING.

100 Pcs. 2⅝" o.d.; 2 1/16" i.d.; 5/32" wall, (Ohio Seamless), 19' long.

U. S. STANDARD SEMI-FINISHED HEX NUTS.

250 2"	Standard.	240 2¼"	Check.
150 2¼"	Standard.	300 2½"	Check.
200 2"	Check.		

TODD SPIRAL PACKING.

10 Boxes ⅜".	4 Boxes ½".
4 Boxes ⅜".	2 Boxes ¾".
2 Boxes ⅜".	

ELECTRICAL EQUIPMENT.

18 Model B Motsinger Auto Sparkers, (Second Hand, in good condition.)
300 Model 02 Wico Igniters.

1 Genl. Elec. Type "I", Four Pole, 20 H.P., 900 R.P.M., 3 Ph., 30 Cycle, 440 Volt, Form "K" Squirrel Cage Induction Motor, No. 160445 (New.)

BELT LACING MACHINE.

1 Birdsboro Belt Lacing Machine, (Practically New.)

CHICAGO PNEUMATIC TOOL COMPANY

1014 Fisher Building
CHICAGO

BRANCHES EVERYWHERE

52 Vanderbilt Ave.
NEW YORK

He Never Did It Before.

A Chicago Pneumatic salesman bought the only remaining sleeping car space. An elderly lady next him in line in front of the ticket window burst into tears.

"I must have a berth in that train," she exclaimed, "it's a matter of life or death!"

The salesman gallantly sold his reservation to her. Next morning his wife was astonished to receive the following telegram from her husband:

"Will not arrive until tomorrow. Gave berth to an old lady last night."

A Real Optimist.

Mrs. Hogan was busy washing when Hogan came in, dropped into a chair and said: "Well, Norah, Oi've lost me job at the oil well, but Oi'm glad Oi ain't Terry Dolan."

"Why air yez thankful fer that?" asked Mrs. Hogan.

"'Tis aisy seen," answered Hogan. "If Oi was Terry now an' widout a job, shure Oi'd be losin' five dollars a day instid av only three and a half. Think av that, darlin'."

Sauce for Goose and Gander.

"What!" exclaimed the motorist, who had run over a farmer's toe. "You want five hundred dollars for a crushed foot? Nonsense! I'm no millionaire."

"Perhaps not," cried the suffering farmer; "and I'm no centipede either."—Exchange.

Celebratin'.

"Pa wants a bottle o' liniment and maw wants a bottle o' china cement, right away."

"All right, sonny. What's wrong?"

"Maw hit paw with the sugar bowl."—Judge.

Rough.

He—So your dear count was wounded?
She—Yes, but his picture doesn't show it.

He—That's a front view.

Ten Lies Oftenest Told.

Here are ten lies which are often heard, according to the amiable Mr. Arthur Aull, of Lamar:

Yes, we're out, but we've just ordered a lot of it.

I didn't care anything about the money. It was the principle of the thing.

I'd just like to have been in his place. I'd have showed them.

If I had that woman for a little while I'd teach her a few things.

If I'd catch a kid of mine at anything like that I'd blister him.

If I had just a little money I know where I could go out and make a pile.

I never would care to be rich, just comfortably fixed.

My wife and I have never exchanged a cross word.

If you don't think it's a good thing for you I don't want you to do it.

I've never seen such weather before.

The Thrill That Comes But Once in a Lifetime.

When you get your first shave.

When entertaining your friends from the country at your favorite hotel, the waiter calls you by name.

On the day you're to take your best girl to a ball game, the old man hands you a couple of passes.

When you get caught in the rain with your wife, who demands a taxi but a friend of yours picks you up in his auto.

The day you played on the home team and your best girl attended the game.

When you are first married and wifey sends you to the store and that entrancing blonde murmurs: "What is it, please?"

When, retiring late at night, you kick over a chair and do not hear her dear voice ask: "Is that you, John?"

When she pins that first rose on you.

On your way to Sunday school with your best girl, her pa comes along in his auto and the old gent stops and says: "Climb in."



A stitch in time may close the mouth
of a gossip.

And a little widow with a dimple is a
dangerous thing.

The late husband catches the early
morning lecture.

Wealth and religion seem to have but
little in common.

There is more or less graft in the con-
struction of family trees.

The bet you intended to make but
didn't is always the one safe bet.

No man likes to have a lawsuit, but if
he has one he dislikes to lose it.

You can rely on a man to keep his
word when it is to his advantage so
to do.

Some men couldn't hear the small
voice of conscience through a mega-
phone.

An old bachelor says that most fash-
ionable young women are engaging
works of art.

The fools that rush in where angels
fear to tread are lucky if they are able
to crawl out.

"Live and let live," is a good motto
for all men—with the exception of
butchers and undertakers.

When ignorance wins intelligence
drops below par.

If a boy doesn't love his mother his is
a hopeless case.

An expressman says that spinsters are
uncalled for packages.

True philosophy consists in not want-
ing the things you can't get.

Satan's best servants are people who
love money and hate work.

The average man is an economist
when he has to buy things for his wife.

Lots of people actually believe that
their troubles are interesting to others.

An air of abstraction isn't breezy
enough to fan a spark of genius into a
flame.

When a man's education is finished he
helps to swell the undertaker's fortune.

The earth is said to be flat at the
poles—and some candidates are also
flattened at the polls.

There may be times when it isn't nec-
essary to speak the truth—but at such
times it is usually unnecessary to speak
at all.

When a man tells you how you ought
to run your business just take a look at
the way he is running his own.

The Chicago Pneumatic Tool Co.

MANUFACTURE THE FOLLOWING
PNEUMATIC TOOLS, APPLIANCES, ETC.

After Coolers
Air Compressors
Air Economizers
Air Forge, Chicago
Air Motors
Air Receivers
Air Jacks
Airoilene
Airoilene Grease
Angle Gears, Little Giant
Angle Gears, Boyer
Annealing Machines
Armour Scaling Machines
Automatic Oilrig Devices
Bell Ringers, Little Giant
Blow-off Cocks, Little Giant
Chucks, Drill
Chucks, Expanding
Commercial Car
Drift Bolt Drivers
Drills, Boyer
Drills, Keller
Drills, Little Giant
Drills, Rock
Drilling Stands
Elevators
Electric Drills, Duntley
Electric Grinders, Duntley
Engineers' Valves
Flue Cutters, Chicago
Flue Rollers, and Expanders, Little Giant
Gas Engines
Gasoline Driven Compressors
Gasoline Engines

Grinders, Portable Electric
Hammers, Riveting
Hammers, Chipping and Calking
Hammers, Stone
Hoists, Duntley Electric
Hoists, Pneumatic Geared
Hoists, Straight Lift
Holders-on
Hose, Special High Grade
Hose Clamp Tool
Hose Couplings (Univ'sal)
Inter-Coolers
Magnetic Old Man
Oil Driven Compressors
Oil Engines
Painting Machines
Pipe Bending Machines
Pneumatic Saws
Pneumatic Plate
Straighteners
Railway Motor Section Cars
Reamers
Reheaters
Rivet Busters
Riveters, Jamb
Riveters, Yoke
Riveters, Compression
Sand Rammers
Sand Sifters
Speed Recorders
Staybolt Chucks
Stone Dressers
Staybolt Nippers
Vacuum Pumps
Winches, Portable

Let the *"Little Giant"* do it.



A "Little Giant" in the transfer and storage service of Paul S. Clelland, Mannington, W. Va.

- IT HAS THE POWER to easily haul the loads that fall within its rated capacity and in emergencies will surprise you with the strength it holds in reserve.
- IT HAS THE ENDURANCE to stand the gaff and keep it up long after it has paid for itself over and over again.
- IT HAS A REPUTATION all its own as evidenced by the repeat orders that are coming in and the fleets that are being installed.
- IT HAS THE BACKING of a \$11,000,000.00 corporation whose reputation is staked on the success of the Little Giant, and which for 21 years has delivered the goods to a most discriminating clientele of buyers, now numbering nearly 25,000 strong.

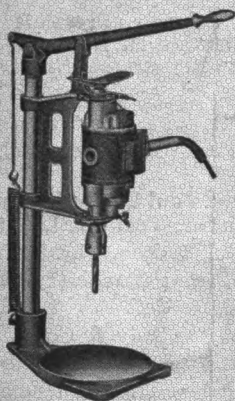
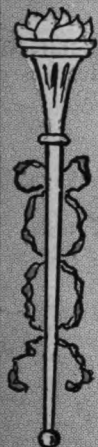
Chicago Pneumatic Tool Co.

General Offices
1014 Fisher Building
Chicago.

Sales Department
1470 Michigan Avenue
Branches Everywhere.

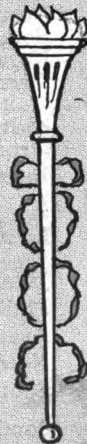
Eastern Office
52 Vanderbilt Avenue
New York.

IDEAL POWER



DUNTLEY
ELECTRIC
DRILLING
STAND

See Article, Page 302



PUBLISHED MONTHLY BY
Chicago Pneumatic Tool Company
 CHICAGO NEW YORK

Chicago Pneumatic Tool Company

Chicago Office, Fisher Bldg.

Eastern Office, No. 52 Vanderbilt Ave.

CHICAGO

NEW YORK

BRANCH OFFICES

Boston: 185 Pleasant Street
 Birmingham: 834 Brown-Marx Bldg.
 Buffalo: 503 Ellicott Square Bldg.
 Cincinnati: 1008 Mercantile Lib. Bdg.
 Cleveland: 1241 E. 49th St.
 Cleveland: 2122 Euclid Ave.
 Detroit: 2nd Ave. and Amsterdam St.
 El Paso: 303 San Francisco St.
 Erie, Pennsylvania
 Franklin, Pennsylvania
 Los Angeles: 241-243 S. Los Angeles St.
 Louisville, Ky.: 31 Todd Bldg.
 Philadelphia: 1740-42 Market St.
 Pittsburgh: 10 and 12 Wood St.
 Portland, Ore.: 46-48 Front St.
 Richmond, Va.: 1004 Mutual Bldg.
 Salt Lake City: 117-119 W. 2nd South St.
 Seattle: 122 King St.
 Spokane: Cor. R. R. and Wall St.
 St. Louis: 813-19 Hempstead St.
 St. Paul: Pioneer Bldg.
 San Francisco: 71 First St.

FOREIGN

Canada: { Montreal, Canadian Pneumatic Tool Co.
 { The Holden Co., Ltd., Montreal, Toronto, Winnipeg.
 British Columbia: Vancouver, Holden Co., Ltd., 429 Pendar St.
 Mexico: Mexico City, The General Supply Co., Av. Isabel La Catolica,
 No. 51.
 Northern Mexico: (Sonora and Chihuahua), Don A. Carpenter & Co., El
 Paso, Texas.
 Great Britain: { London, The Consolidated Pneumatic Tool Company,
 Spain: { Ltd., 9, Bridge Street, Westminster, S. W.
 Portugal:
 France: Paris, Anciens Etablissement, Glaenger & Perreaud, 18-20 Fau-
 bourg du Temple.
 Belgium: Brussels, The Consolidated Pneumatic Tool Co., Ltd., 22 Chaus-
 see de Forest, Porte de Hal.
 Italy: Milan, The Consolidated Pneumatic Tool Co., Ltd., via A. Cappellini 7.
 Germany:
 Austria Hungary:
 Balkan States:
 Norway:
 Sweden:
 Holland:
 Switzerland:
 Denmark:
 Russia: Petrograd; Phoenix Engineering Works Co., Ltd., Polustrovskaya.
 Quay No. 39.
 India: { Bombay, Consolidated Pneumatic Tool Co., Ltd., Rampart Row, Fort.
 { Calcutta, The Consolidated Pneumatic Tool Co., Ltd., 8 Lal Bazar St.
 Japanese Empire: Tokyo, Osaka, Seoul, Dairen, The F. W. Horne Co.
 Philippine Islands: Manila, Frank L. Strong Machinery Co., 64-68 Echague.
 Australia: Sydney, Henry W. Peabody & Co.
 New Zealand: Wellington, Henry W. Peabody & Co.
 South America: Buenos Aires, Argentina, Evans, Thornton & Co.
 South Africa: { Johannesburg, The Consolidated Pneumatic Tool Co.,
 Ltd., 190 Main Street.

BULLETIN DIRECTORY

Requests for these bulletins should be directed to our Chicago or New York offices or to our nearest branch as shown on inside front cover.

PNEUMATIC TOOLS

- 121...Pneumatic Rammers and Foundry Appliances.
- 124...Pneumatic Riveting, Chipping, Calking and Stone Hammers.
- 125...Pneumatic Yoke, Jam and Shell Riveters, Holders-on, Drift Bolt Drivers, Rivet Busters.
- 126...Compression Riveters.
- 127...Pneumatic Drills, Corner Drills, Reamers, Wood Bore, Flue Rolling and Tapping Machinery and Grinders.
- 128...Miscellaneous equipment for Pneumatic Drills, viz: Chucks, Twist Drills, Reamers, Augers, Flue Cutters, Flue Expanders, Angle Gears.
- 129...Hose, Hose Couplings and Hose Clamp Tools.
- 130...Lubrication of Pneumatic Tools.
- 131...Miscellaneous Tools, viz: Pipe Benders, Air Forge, Bolt Nipper, Drilling Stands, Blow-off Cocks, Bell Ringers, Drill Repair Vises, Painting Machines.
- 132...Pneumatic Motors and Pneumatic Geared Hoists.
- 133...Cylinder Air Hoists and Jacks.

ELECTRIC TOOLS

- E-22...Heavy Duty Electric Drills, Alternating Current.
- E-25...Electric Hoists.
- E-31...Duntley Electric Drilling Stands.
- E-32...Duntley Track Drills.
- E-33...Heavy Duty Electric Drills, Direct Current.
- E-34...Duntley Electric Hammer Drill.
- E-35...Duntley Universal Electric Drills.
- E-36...Duntley Electric Grinders.

AIR COMPRESSORS AND FUEL OIL ENGINES

- 34-A...Class "G" Steam Driven "Chicago Pneumatic" Compressors.
- 34-B... "Chicago Pneumatic" Power Driven Compressors.
- 34-C... "Chicago Pneumatic" Gasoline and Fuel Oil Engine Driven Compressors.
- 34-D... "Chicago Pneumatic" Corliss Compressors, Steam Driven.
- 34-F...Design and Construction Class "G" "Chicago Pneumatic" Compressors.
- 34-G...Air Receivers, Aftercoolers, Reheaters, etc.

- 34-H...General Instructions for Installing and Operating "Chicago Pneumatic" Compressors.
- 34-I...Instructions for Installing and Operating N-SS and N-SB Compressors.
- 34-J...Instructions for Installing and Operating Class O Compressors.
- 34-K...Class N-SO and N-SG Fuel Oil and Gas Driven Compressors.
- 34-L...General Pneumatic Engineering Information.
- 34-M...Class "O" "Chicago Pneumatic" Steam and Power Driven Compressors.
- 34-N...Class N-SS and N-SB Single Enclosed Compressors.
- 34-O...Instructions for the Installation and Care of "Chicago Pneumatic" Gasoline Driven Air Compressors.
- 34-R...Class L-SS and L-SB New Enclosed Type Self-Oiling "Chicago Pneumatic" Compressors.
- 34-S...Small Power Driven Compressors.
- 34-U...Instructions for Installing and Operating Class N-SO Fuel Oil Compressors.
- 34-V...Instructions for Installing and Operating Giant Fuel Oil Engines.
- 34-W...Class A-O Fuel Oil Engines.
- 34-X...Class A-G Gas and Gasoline Engines.
- 213...Simplate Flat Disc Valves.

ROCK DRILLS AND HAND DRILLS

- 148...Chicago Valveless Hand Drills.
- 149...Chicago Portable Mine Hoist.
- 150...Chicago Coal Drills.
- 151...Chicago Slogger Rock Drills.
- 152...Chicago Gatling Drills.
- 153...Chicago Sinker.
- 154...Chicago Stopper.
- 172...Chicago Plug and Feather Drill.
- 216...Hummer Hammer Drills.

LITTLE GIANT TRUCK

Catalogue No. 222.
Folder 223. 1 and 1 1/4-ton and Six-wheel Little Giant Trucks.

ROCKFORD and MISCELLANEOUS

- 42...Boyer Speed Recorder.
- 43...Rockford Railway Motor Car.
- 117...Lubrication of Rockford Cars.
- 119...Operation of Rockford Cars.
- 166...Boyer Speed Recorder with Clock Attachment.

CHICAGO PNEUMATIC TOOL CO.

1014 Fisher Bldg., CHICAGO

Branches Everywhere

52 Vandervilt Ave., NEW YORK

CONVENTIONS.

Nov. 17, 1915—American Railway Ass'n at Chicago.

Nov. 18-19, 1915—Ohio Society of Mechanical, Electrical and Steam Engineers at Zanesville, Ohio.

Dec. 7-10, 1915—American Society of Mechanical Engineers at New York.

May, 1916—Air Brake Ass'n at Atlanta, Ga.

June, 1916—American Institute of Electrical Engineers.

June, 1916—International Railway Fuel Ass'n at Chicago.

ENGINEERING SOCIETIES, ETC.

American Association of Railroad Superintendents (General)—General Secretary, E. H. Harmon, St. Louis, Mo.

American Concrete Institute—Secretary, Edw. E. Krauss, Harrison Bldg., Philadelphia, Pa.

American Electric Railway Association—Secretary-Treasurer, E. B. Burritt, 8 W. 40th St., New York, N. Y.

American Highway Association—Executive Secretary, I. S. Pennybacker, Colorado Bldg., Washington, D. C.

American Institute of Electrical Engineers—President, John J. Carty, 15 Day St., New York; Secretary, F. L. Hutchinson, 33 W. 39th St., New York.

American Institute of Mining Engineers—Secretary, Bradley Stoughton, 29 W. 39th St., New York City.

American Mining Congress—Secretary, J. F. Callbreath, Jr., 1021 Munsey Bldg., Washington, D. C.

American Order of Steam Engineers—Supreme Chief Engineer, J. W. Parent, Philadelphia, Pa.; Supreme Corresponding Engineer, Edw. A. Rebold, 1110 Earl St., Philadelphia, Pa.

American Railway Engineering Association—Secretary, E. H. Fritch, 1011 Karpen Bldg., Chicago, Ill.

American Road Builders' Association—Secretary, E. L. Powers, 150 Nassau St., New York.

American Society of Civil Engineers—Secretary, Chas. Warren Hunt, 220 W. 57th St., New York City.

American Society of Engineering Contractors (Inc.)—Secretary, J. R. Wemlinger, South Ferry Bldg., New York City. Meetings: Second Thursday every month.

American Society of Heating and Ventilating Engineers—Secretary, J. J. Blackmore, 29 W. 39th St., New York City.

American Society of Mechanical Engineers—Secretary, Calvin W. Rice, 29 W. 39th St., New York City.

American Society of Naval Engineers—Secretary-Treasurer, Lieut. A. T. Church, U. S. N., Navy Department, Washington, D. C.

American Water Works Association—Secretary, J. M. Diven, 47 State St., Troy, N. Y.

Association of Civil Engineers, Cornell University—President, A. F. Williams, Ithaca, N. Y.; Secretary, A. S. Patrick, Ithaca, N. Y.

Association of Engineering Societies—Chairman Board of Managers, John W. Woermann, 423 Custom House, St. Louis, Mo.; Secretary, Joseph W. Peters, 8817 Olive St., St. Louis, Mo.

Association of Railway Electrical Engineers—Secretary, J. A. Andreucetti, C. & N. W. Ry. Co., Chicago, Ill.

Boston Society of Civil Engineers—Secretary, S. Everett Tinkham, 715 Tremont Temple, Boston, Mass.

Canadian Society of Civil Engineers—Secretary, Clement H. McLeod, 176 Mansfield St., Montreal, Can.

Canadian Railway Club—Secretary, James Powell, Grand Trunk Ry., Montreal, Que.

Central Railway Club—Secretary, H. D. Vought, 95 Liberty St., New York.

Civil Engineers' Society of St. Paul—Secretary, Edw. J. Dugan, Room 7, Old State Capitol Bldg., St. Paul, Minn.

Cleveland Engineering Society—Secretary, David Gaehr, Chamber of Commerce Bldg., Cleveland, Ohio.

Connecticut Society of Civil Engineers—President, C. C. Elwell, New Haven, Conn.; Secretary-Treasurer, J. Frederick Jackson, Box 1304, New Haven, Conn.

Detroit Engineering Society—Secretary-Treasurer, E. M. Walker, 532 M. C. Sta., Detroit, Mich.

Engineering Association of the South—Secretary-Treasurer, W. Harwell Allen, 918 Stahlman Bldg., Nashville, Tenn.

Engineers' Club of Cincinnati—Secretary, E. A. Gast, P. O. Box 333, Cincinnati, Ohio.

Engineers' Club of Minneapolis—President, L. S. Gillette, 74 Chamber of Commerce, Minneapolis, Minn.; Secretary, Louis Clousing, 2411 Oakland Ave., Minneapolis.

Engineers' Club of Philadelphia—Secretary, L. H. Kenney, 1317 Spruce St., Philadelphia, Pa.

Engineers' Club of St. Louis—Secretary, W. W. Horner, 6203 Maple Ave., St. Louis, Mo.

Engineering Society of Purdue University, Lafayette, Ind.—Secretary, C. B. Penrod, 123 State St., W. Lafayette, Ind.

Engineering Society of Buffalo—President, John Younger, Secretary, W. J. Gamble, 295 Ontario St.

Engineers' Society of Pennsylvania—Secretary, E. B. Dasher, 31 S. Front St., Harrisburg, Pa.

Engineers' Society of Northeastern Pennsylvania—Secretary, T. F. McKenna, care of Engineers' Club, Scranton, Pa.

Engineers' Society of Western Pennsylvania—Secretary, Elmer K. Hiles, 2511 Oliver Bldg., Pittsburgh, Pa.

Illinois Society of Engineers and Surveyors—Secretary, E. E. R. Tratman, Wheaton, Ill.

Indiana Engineering Society—Secretary, Chas. Brossmann, Indianapolis, Ind.

International Railway Congress Association—President (of the International Commission), W. Toudeller, 11 Rue de Louvain, Brussels, Belgium; Secretary, General L. Weissenbruch, same address.

Iowa Engineering Society—Secretary-Treasurer, Prof. J. H. Dunlap, Iowa City, Iowa.

Lake Superior Mining Institute—Secretary, A. J. Yungbluth, Ishpeming, Mich.

Louisiana Engineering Society—President, L. C. Dats; Secretary, W. T. Hogg, P. O. Sta. 20, New Orleans, La.

Michigan Engineering Society—President, Delmar E. Teed, Cadillac, Mich.; Secretary, Samuel J. Hoexter, Ann Arbor, Mich.

Montana Society of Engineers—President, Martin H. Gerry, Jr., Helena, Mont.; Secretary, Clinton H. Moore, Butte, Mont.

New England Association of Commercial Engineers—Secretary, F. S. Eggleston, Jr., 53 Devonshire St., Boston, Mass.

New England R. E. Club—Secretary, W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass.

New York Railroad Club—Secretary, Harry D. Vought, 95 Liberty St., New York, N. Y.

Ohio Engineering Society—President, W. F. Schepflin, Fremont, O.; Secretary, Jno. Laylin, Hartman Bldg., Columbus, O.

Ohio Society of Mechanical, Electrical and Steam Engineers—Secretary-Treasurer, Frank E. Sanborn, Ohio State University, Columbus, Ohio.

Railway Club of Pittsburgh—Secretary, J. B. Anderson, Room 207, Penn. E. Station, Pittsburgh, Pa.

Richmond Railroad Club—Secretary, F. O. Robinson, C. & O. Railway, Richmond, Va.

Rochester Engineering Society of Rochester—Secretary-Treasurer, F. C. Taylor, 34 Clinton Ave., Rochester, N. Y.

St. Louis Railroad Club—Secretary, B. W. Frauenthal, Union Station, St. Louis, Mo.

Southern & Southwestern Railway Club—Secretary, A. J. Merrill, Grant Bldg., Atlanta, Ga.

Toledo Society of Engineers—President, L. M. Gram, 1047 Spitzer Bldg., Toledo, O.; Secretary, L. T. Owen, 1047 Spitzer Bldg., Toledo, O. Regular meeting, second Friday in each month.

Utah Society of Engineers—Secretary, C. J. Ulrich, 321 Felt Bldg., Salt Lake City, Utah. Third Friday of each month, except July and August.

Vermont Society of Engineers—Secretary, Geo. A. Reed, Barre, Vt.

Western Railway Club—Secretary, J. W. Taylor, 1112 Karpen Bldg., Chicago, Ill.

Western Society of Engineers—President, Wm. B. Jackson, Harris Trust Bldg., Chicago; Secretary, J. H. Warder, 1735 Monadnock Bldg., Chicago.

MECHANICAL AND TRADE SOCIETIES.

Air Brake Association—Secretary, F. M. Nellis, 53 State St., Boston, Mass.

American Boiler Manufacturers' Association—President, W. C. Connelly, Ivanhoe Road and Nickle Plate R. R., Cleveland, O.; Secretary, J. D. Farasey, 37th St. and Erie Ry., Cleveland, O.

American Electric Railway Association—Secretary-Treasurer, E. B. Burritt, 8 W. 40th St., New York City.

American Electric Railway Manufacturers' Association—Secretary-Treasurer, H. G. McConnaughey, Suite 1002, 165 Broadway, New York City.

American Foundrymen's Association—Secretary, A. O. Backert, 12th and Chestnut Sts., Cleveland, Ohio.

American Institute of Metals—Secretary-Treasurer, W. M. Corne, 106 Morris Ave., Buffalo, N. Y.

American Railway Association—General Secretary, W. F. Allen, 75 Church St., New York City.

American Railway Bridge and Building Association—President, L. D. Hadwen, C. M. & St. P. Ry., Chicago; Secretary, C. A. Lichty, C. & N. W. Ry., Chicago.

American Railway Master Mechanics' Association—President, E. W. Pratt, A. S. M. P. & M., care of C. & N. W. Ry., Chicago, Ill.; Secretary, J. W. Taylor, Karpen Bldg., Chicago.

American Railway Tool Foremen's Association—Secretary, O. D. Kinsey, Illinois Central R. R., Chicago.

Boiler Makers' Supply Men's Association—Secretary, Geo. Slate, The Boiler Maker, 17 Battery Pl., New York City.

Canadian Association of Stationary Engineers—Secretary, W. A. Crockett, Mount Hamilton, Ont., Can.

Canadian Roadmasters' Association—Secretary, J. M. Mackenzie, West Toronto, Can.

Car Foremen's Association of Chicago—President, Chas. J. Wymer, Gen. For. for Belt Ry. of Chicago; Secretary, Aaron Kline, 841 N. Lawler Ave., Chicago.

General Superintendents' Association of Chicago—Secretary, A. M. Hunter, 321 Grand Central Station, Chicago.

International Railroad Master Blacksmiths' Association—Secretary, A. L. Woodworth, C. H. & D. Ry., Lima, O.

International Railway Fuel Association—C. G. Hall, Secretary, 922 McCormick Bldg., Chicago.

International Railway General Foremen's Association—Secretary-Treasurer, Wm. Hall, C. & N. W. Ry., 1126 W. Broadway, Winona, Minn.

International Union of Steam Engineers—President, Matt Comerford; Secretary-Treasurer, James G. Hannahan, 6384 Yale Ave., Chicago.

Master Boiler Makers' Association—President, Andrew Green, Big Four R. R., Indianapolis, Ind.; Secretary, Harry D. Vought, 95 Liberty St., New York City.

Master Car Builders' Association—President, D. R. McBain, S. M. P., care of N. Y. C. R. R., Cleveland, O.; Secretary, J. W. Taylor, Karpen Bldg., Chicago, Ill.

Master Car and Locomotive Painters' Association—Secretary, A. P. Dane, B. & M. R. R., Reading, Mass.

Maintenance of Way Master Painters' Association, United States and Canada—Secretary, T. I. Goodwin, C., R. I. & P., Eldon, Mo.

National Association of Stationary Engineers—Secretary, Fred W. Raven, 417 S. Dearborn St., Chicago, Ill.

National Founders' Association—Secretary, J. M. Taylor, Room 842, 29 S. La Salle St., Chicago, Ill.

National Railway Appliances Association—Secretary, Bruce V. Crandall, 14 E. Jackson Blvd., Chicago, Ill.

Railway Equipment Manufacturers' Association—President, Wm. S. Furry, Ohio Injector Co., Monadnock Bldg., Chicago; Secretary, F. N. Bard, Barco Brass & Joint Co., 212 W. Illinois St., Chicago, Ill.

Railway Signal Association—President, Thos. S. Stevens, A. T. & S. F. Ry., Topeka, Kans.; Secretary, C. C. Rosenberg, Bethlehem, Pa.

Railway Storekeepers' Association—President, J. G. Stuart, G. S. K., care of C., B. & Q. R. R., Chicago, Ill.; Secretary, J. P. Murphy, Box C, Collinwood, O.

Railway Supply Manufacturers' Association—Secretary-Treasurer, J. D. Conway, 2136 Oliver Bldg., Pittsburgh, Pa.

Roadmasters' and Maintenance of Way Association—Secretary-Treasurer, L. C. Ryan, C. & N. W. Ry., Sterling, Ill.

Supply Men's Association of American Boiler

Manufacturers' Association of United States and Canada—President, J. T. Corbett (J. T. Ryerson & Son), Chicago; Secretary, F. B. Slocum (Continental Iron Works), Brooklyn, N. Y.

Traveling Engineers' Association—Secretary, W. O. Thompson, N. Y. C. Car Shops, East Buffalo, N. Y.

The Ones to Dodge.

"Doesn't it give you a terrible feeling when you run over a man?" they asked him.

"Well, if he's a large man," replied the automobilist, "it does give one a pretty rough jolt."—Ladies' Home Journal.

Just in Time.

A young man who last June received his diploma has been looking around successively for a position, for employment and for a job. Entering an office, he asked to see the manager, and while waiting he said to the office boy:

"Do you suppose there is any opening here for a college graduate?"

"Dere will be," was the reply, "if de boss don't raise me salary to t'ree dollars a week by tomorrer night."

Only They Who Know Won't Tell.

The Archbishop had preached a fine sermon on married life and its beauties. Two old Irish women were heard coming out of church commenting on the address.

"'Tis a fine sermon his Rivirence would be after giving us," said one to the other.

"It is, indade," was the quick reply, "and I wish I knew as little about the matter as he does."

W'cha Mean?

Two small boys were having a somewhat rough struggle just outside of the Chase factory and when one received an unexpectedly hard blow he exclaimed: "If you don't look out you'll end up in a place that begins with 'h' and ends with 'l'!" President Chase, who was passing, on hearing the remark, scolded the boy severely for what he said. "Well," replied the boy, after a pause, "I'm sure I don't know what you're talking about. I only meant 'hospital.'" Still, we're not infallible.



"CLEVELAND" Bridge Reamers

These reamers are designed for rough, severe service in structural iron and steel work and boiler plates. They are particularly adapted for use in pneumatic and electric portable tools. Write for Circular U.

The **CLEVELAND** Twist Drill Co.
Chicago CLEVELAND New York

NECESSITIES

High Grade Rubber Goods

Fire Hose

Reels, Nozzles

Fire Hose Carts

Rubber Cement

P. & W. Rubber Preservative

Rubber Boots

Leather-Soled Rubber Boots

Leather Belting

Upholsterer's Leather

Leather and Silk Fringes

Vestibule Diaphragms

Gimp

Brass Nails

Leather Head Nails

Signal Flags

Bunting

Linoleum

Cab Cushions

Cab Curtains

Track Jacks

Economy Soap Stock

Nut Locks

GUILFORD S. WOOD

Great Northern Building

CHICAGO, ILLINOIS

BURKE ELECTRIC COMPANY

MAIN OFFICE AND WORKS

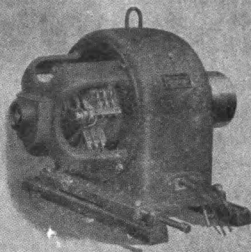
ERIE, PA.

BULLETIN 109

January, 1911

DIRECT CURRENT MOTORS AND GENERATORS

WATTS 1/2 TO 100 H. P.



TYPE 28 MOTOR, WITH RAILS AND COLLECTOR

Direct Current Motors

of robust characteristics are illustrated and described in this bulletin.

If you have not yet read about them, send for a free copy.

BURKE ELECTRIC COMPANY

ERIE,
PA.

BURKE ELECTRIC CO., Erie, Pa.
Please Send Bulletin 109-C

Name.....
Address.....

When writing to advertisers please mention Ideal Power.

IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances and Motor Truck
By THE IDEAL POWER PUBLISHING COMPANY
Fisher Building, Chicago

VOL. XI

NOVEMBER, 1915

No. 10

Installation of Oil Engine Simple as Compared With Steam

By W. H. Callan, Manager Compressor and Engine Plant.
Chicago Pneumatic Tool Co., Franklin, Pa.

The "Giant" Oil Engine, made by the Chicago Pneumatic Tool Company, offers many advantages to the industrial manufacturer, and to show the exceptional convenience and applicability of this engine for such service, I give below a real happening and show how readily this unit lends itself to such conditions.

The line shaft and form of drive installed in our shop is what is known as the "Multiple or English System of Rope Drive," and was made by the George V. Cresson Company of Philadelphia, Pa.

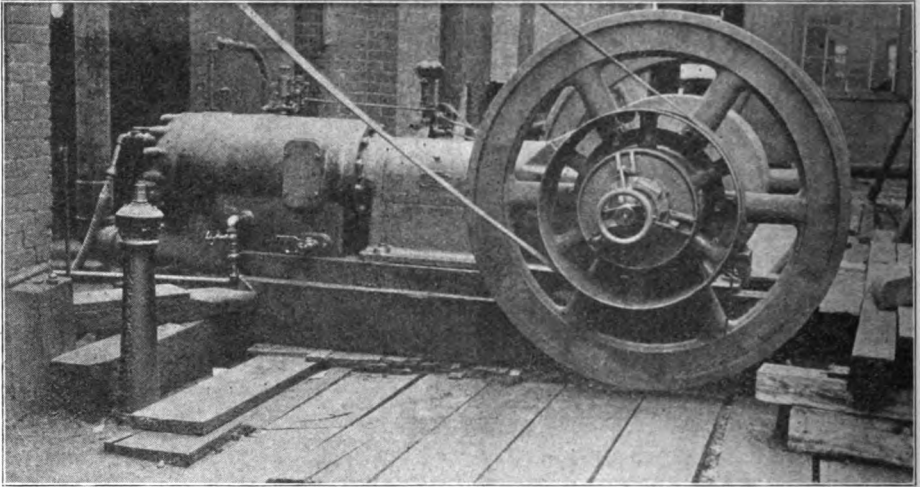
As we were shutting the engine down at quitting time on the evening of August 4th, the crosshead gave way, badly bending the piston rod, off-setting the connecting rod, twisting the crank on the shaft, as well as bending the main shaft; thus putting our power plant completely out of commission. This happened at five o'clock in the evening, and, as might be understood, it required some little time to collect our thoughts sufficiently so as to know just how best to proceed in order to get the plant running by seven o'clock the next morning.

The arrangement of our plant is such that we have two long lines of shafting, one located on each side of the main

shop. Another section of shafting extends from the power plant, over into the pattern shop, the latter section furnishing the power for the pattern shop and electric generator.

When the excitement of the mishap died down an hour or so after it happened, we were able to sufficiently collect our thoughts so as to proceed toward installing Giant oil engines at suitable places and connect them to the line shafting. We had several "Giant" Oil Engines in stock at the time this happened, therefore proceeded to locate them at suitable points under these different sections of shafting. Four gangs of men were selected, three for the placing of the engines and the other gang to procure suitable pulleys for connection to the line shaft so that when the engines were placed they could be belted up. The engines were equipped with suitable clutches for throwing out when desired to stop or start them.

We show, in the photograph attached, one of the engines that was installed to drive the line shafting which operated the generator and pattern shop machinery. The arrangement of the shafting in this case was such that it was the most convenient for us to locate this



Giant Fuel Oil Engine—one of several installed over night during breakdown in power plant.

engine out of doors between the two buildings, as shown, which gave us an excellent opportunity to place it without interference to either of these departments.

This, as might be imagined, was a hurry-up job all through, and in the photograph shown it will be noted that the belt was much narrower than the pulley of the clutch. The reason for this is that it was the only belt of its kind available, as on account of this engine being out of doors it was impossible for us to use a leather belt, and the only kind of canvas belt we had was one 6 inches in width. We soon found that a single belt was inadequate for the load, so another piece of 6-inch belt was applied over the top of the one already in place, which increased the pulling power of the belt materially.

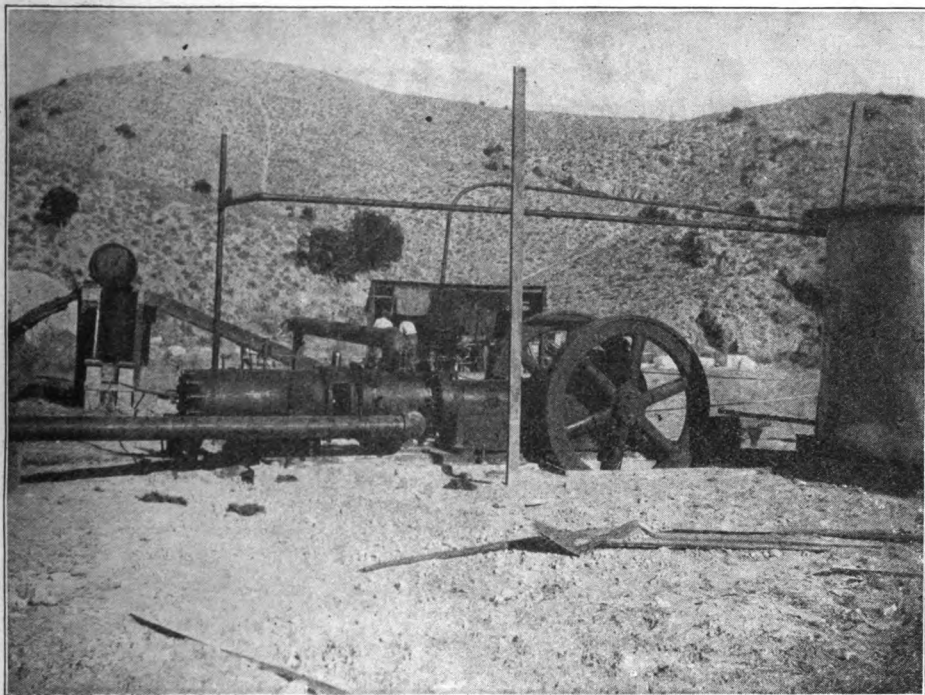
It took some little experimenting on such matters as this. However, I am glad to say that at seven o'clock the next morning we had our plant in operation, with several engines driving the different sections of line shafting as above outlined.

One of the principal reasons why we were able to make these installations in such short time was that there was very little to do with the engines other than

to place them, as there were no expensive steam lines to run to the engine, nor drains, traps, nor expensive piping to connect, but rather all that was needed was to place an oil tank close to the engine, connect a piece of pipe to the exhaust and go ahead.

We operated our plant with this arrangement of engines until the main engine was repaired and put in shape, which required about fourteen days' time. There was not a single hold-up or shut-down during this entire period, chargeable to the engines' failure.

The engine shown in the photograph, as will be noted, is merely setting on a wood skid, which is suitably braced from the building, the skid being held down by bars of steel laid across the top, as shown. Our reason for photographing this engine and not the others was that this one was outside the building and shows rather an extreme condition. This engine was connected to the shaft driving the generator and pattern shop machinery. Our electric lights and traveling cranes, as well as a number of machine tools were all on the same circuit, and, despite the fact that electric crane and machine tool service is very intermittent, we experienced absolutely no trouble with our electric lights during



N-SO Compressor installed by the Travertine Onyx Co. at Low, Utah.

Low, Tooele County, Utah,
Sept. 9, 1915.

The F. C. Richmond M'chy Co.,
Salt Lake City, Utah:

Gentlemen:—Permit us to add our few words of praise to the long list of recommendations shown us at the time our power plant was under consideration; of the 292-foot displacement type N-SO Chicago Pneumatic Tool Co.'s Gas Engine and Compressor recently sold us.

From the time this unit was received on our siding to the present time we experienced no difficulty in handling, setting, fitting up or starting, and this in the absence of a practical gas engineer or machinist.

The simplicity of the machine and

complete instructions sent us rendered this possible, and we are firmly convinced that had not this unit been obtainable we would have been obliged to have given up the idea of installing a power plant owing to the difficulties under which we operate, including lack of water, high teaming expense, etc.

At the present time the unit is operating perfectly, and we anticipate no difficulty in keeping it in that condition.

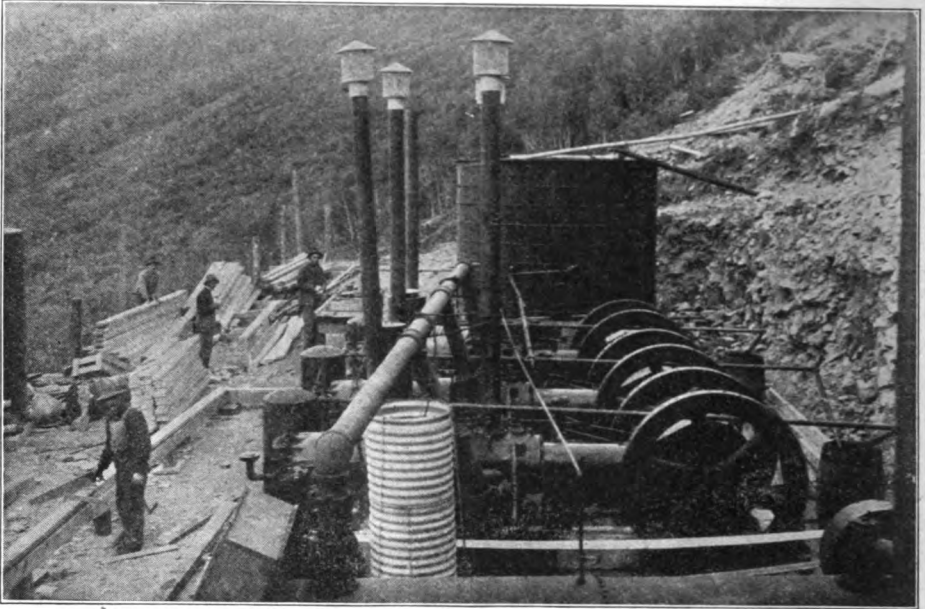
Thanking you for your many courtesies and anticipating the day we may hand you our order for a duplicate unit, we are,

Yours very truly,
TRAVERTINE-ONYX CO.,
P. W. Lincoln, Supt.

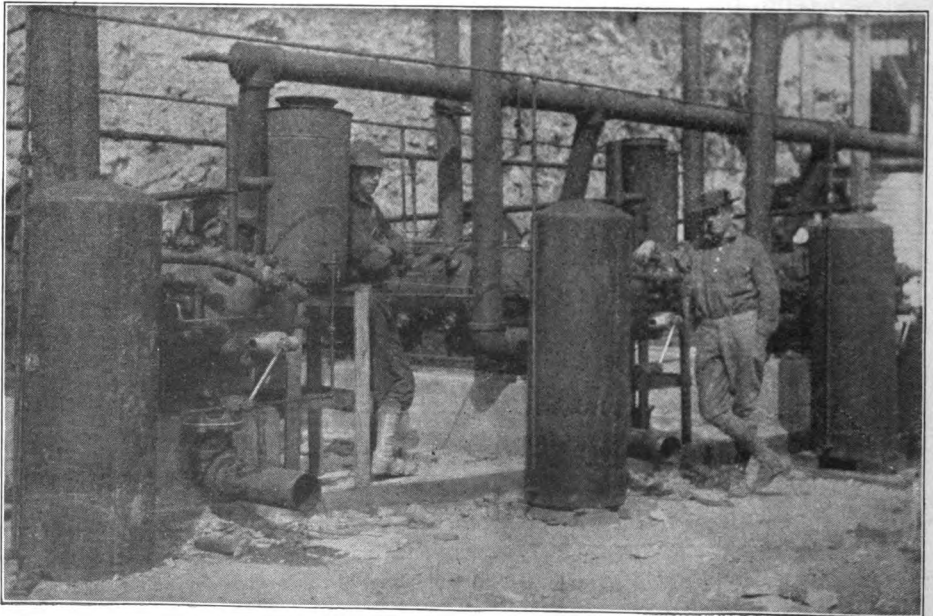
the time the power was furnished by this fifty-horse power oil engine.

In addition to the intermittent service of our fifteen-ton electric cranes and other electric tools in the shop, this same section of shafting was driving the pattern shop machinery, where high speed wood planers and circular saws

are constantly being suddenly started and stopped. We have direct current, 115 volts, and since no trouble was experienced even with this unsteady service, it is proof in itself that our oil engine becomes a very satisfactory prime mover for electric machines.



Battery of three N-SO Chicago Pneumatic Fuel Oil Compressors installed by the Mineral Products Corporation, Marysville, Utah.



Another view of the same plant.

THE MINERAL PRODUCTS CORPORATION
MARYSVALE, UTAH

Marysvale, Utah, Oct. 25, 1915

F. C. Richmond Machinery Co.

117 West 2d South Street,

Salt Lake City, Utah.

Gentlemen:

ATTENTION MR. F. C. RICHMOND

Concerning the installation of three of your Chicago Pneumatic Tool Company's type N-S-O air compressors, I wish to inform you that these machines have given us extremely satisfactory service.

The machines have been in operation constantly since the completion of installation on September 20th and we have had no difficulties of any kind in their operation.

The plant has proven to be very economical and efficient and I wish to express my high degree of satisfaction with the same.

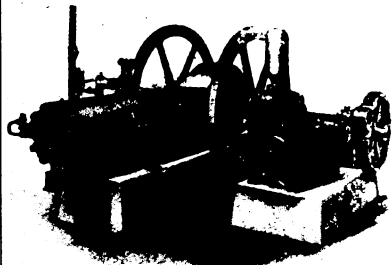
Very truly yours,

JAL/FHS

MINERAL PRODUCTS CORPORATION.

James A. Lane MGR.

A Few Applications of Giant Oil Engines



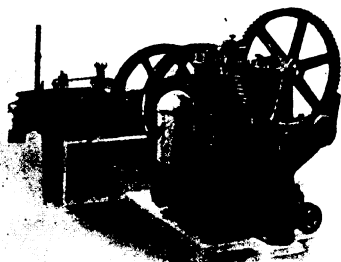
Giant Oil Engine Driving Gardner Pump

We furnish complete installations



Giant Oil Engine Operating Volume Pump

An ideal short belt drive outfit



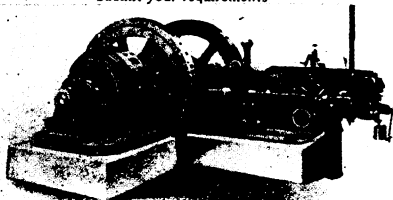
Giant Oil Engine Operating Goulds Triplex Pump

Submit your requirements



Giant Oil Engine Operating Planometer

Also furnished with belt drive



Giant Oil Engine Direct Connected to Generator

Regulation guaranteed within 3 per cent variation
This combination also furnished with belt drive



Giant Oil Engine Operating Pump

We supply complete installation
for any form of pumping service

ASK FOR QUOTATIONS

Chicago Pneumatic Tool Co.

1014 Fisher Bldg., Chicago

Branches
Everywhere

52 Vanderbilt Ave., New York

When writing to advertisers please mention Ideal Power.

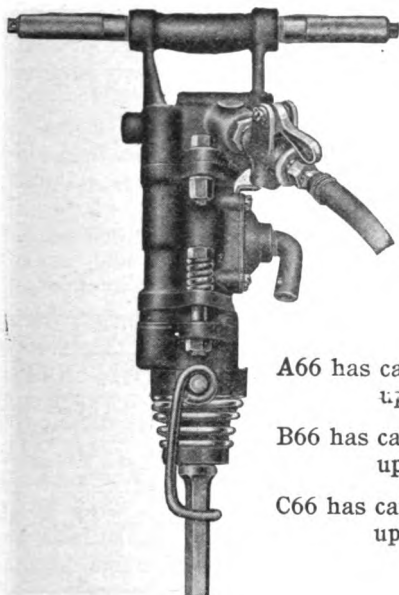
Digitized by Google

Boyer **Hummer** Self Rotating **Hammer Drills**

Built by the Largest Manufacturer of
Pneumatic Hammers in the World

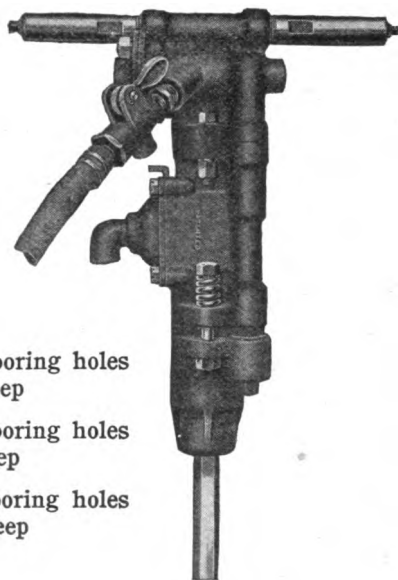


A66 "LITTLE HUMMER" Drill with Auger Bit for Drilling Ore, Coal, Sandstone, Etc.



A66 "Little Hammer"

SEND FOR
BULLETIN
216



B66 "Hammer"

A66 has capacity for boring holes
up to 6 ft. deep

B66 has capacity for boring holes
up to 8 ft. deep

C66 has capacity for boring holes
up to 12 ft. deep

Chicago Pneumatic Tool Co.

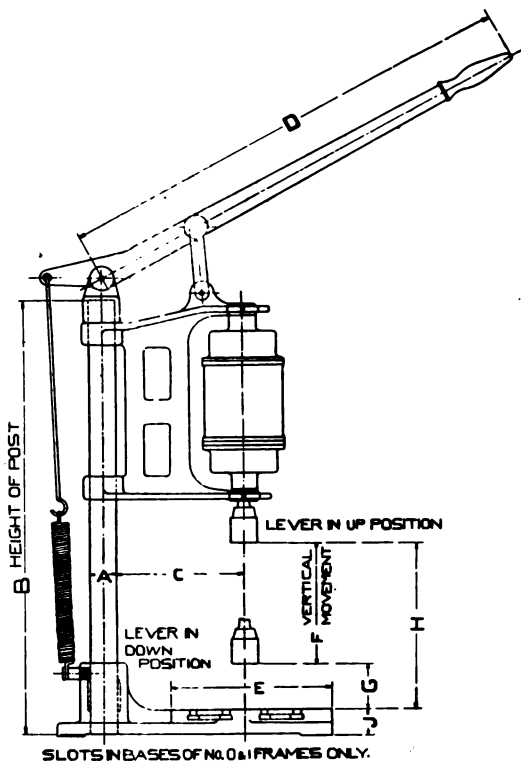
1014 Fisher Bldg.
CHICAGO

Branches Everywhere

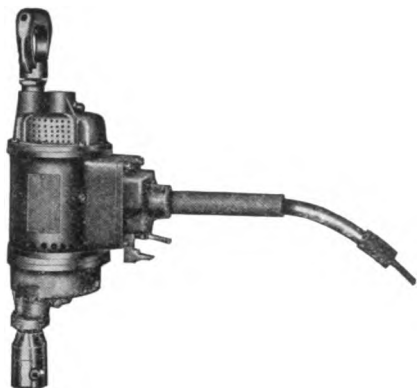
52 Vanderbilt Ave.
NEW YORK

Hammer
When writing to advertisers please mention Ideal Power.

General Dimensions of Duntley Electric Sensitive Drilling Stands



SIZE No. ELECTRIC DRILL	No. 000	No. 000X	No. 00	No. 0	No. 1
Drilling Capacity in Metal	$\frac{3}{16}"$	$\frac{1}{4}"$	$\frac{5}{16}"$	$\frac{3}{8}"$	$\frac{1}{2}"$
A	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{5}{8}$	$1\frac{5}{8}$
B	19	21	$23\frac{3}{8}$	$24\frac{7}{8}$	$26\frac{1}{8}$
C	$5\frac{3}{8}$	$5\frac{3}{8}$	$5\frac{3}{8}$	$7\frac{3}{16}$	$7\frac{3}{16}$
D	$14\frac{1}{16}$	$14\frac{1}{16}$	$14\frac{1}{16}$	$26\frac{1}{8}$	$26\frac{1}{8}$
E	8	8	8	10	10
F	$4\frac{3}{8}$	$4\frac{1}{2}$	$4\frac{1}{8}$	$5\frac{1}{2}$	$5\frac{3}{4}$
G	$4\frac{3}{8}$	$5\frac{1}{4}$	$3\frac{3}{4}$	$3\frac{5}{8}$	4
H	$8\frac{3}{4}$	$9\frac{3}{4}$	$8\frac{9}{16}$	$9\frac{1}{8}$	$9\frac{3}{4}$
J	$7\frac{7}{8}$	$7\frac{7}{8}$	$7\frac{7}{8}$	$1\frac{5}{8}$	$1\frac{5}{8}$
Wt. in lbs. of Stand Only	$16\frac{1}{2}$	17	$19\frac{1}{2}$	44	$46\frac{1}{2}$
Code Word Stand Only	Madros	Magique	Mainote	Maldad	Mamelon



Duntley Electric Universal Side Spindle
Drill—Size 0.

Duntley Electric Sensitive Drilling Stand.

This stand is strong and substantially made throughout and is intended for accurate drilling. The weight of the drill and drill arm is counterbalanced by means of a spring, and a key or feather in the movable bracket keeps the drill in vertical alignment and insures the drilling of straight holes.

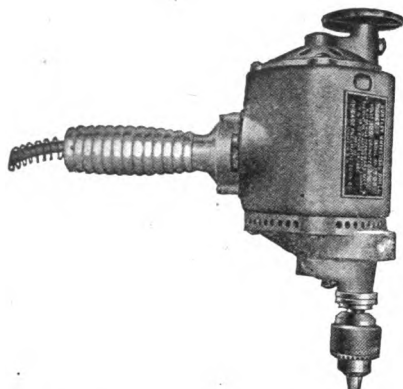
The larger sizes are provided with tee slots in the base plate so that the work may be bolted down if desired.

It is built in five sizes to take the standard Duntley side spindle drills of either the universal or direct current types (see drill bulletins) ranging in drilling capacity of from $\frac{1}{8}$ to $\frac{1}{2}$ inch in metal.

The drill itself is held in place by two clamping straps, shown in the cut, secured by screws and thumb nuts, allowing it to be removed in a few seconds and used as a portable drill.

Any of the standard Duntley Heavy Duty Side Spindle Drills of from $\frac{1}{8}$ to $\frac{1}{2}$ inch drilling capacity manufactured by this company will fit the drilling stand corresponding to their respective capacities, as shown in the table on the opposite page.

The Universal Drills are described in



Duntley Electric Universal Side Spindle
Drill—Size 000.

detail in Bulletin E-35 and will run interchangeably on direct or single phase alternating current of 60 cycles or less.

The direct current drills are described in Bulletin E-33.

And Then He Sat Down.

"I think that children are not so observing as they used to be," said a member of the School Board to a teacher whose class he was visiting.

"I hadn't noticed it," replied the teacher.

"Well, I'll prove it to you," answered the committeeman. Turning to the class, he said:

"Some one give me a number."

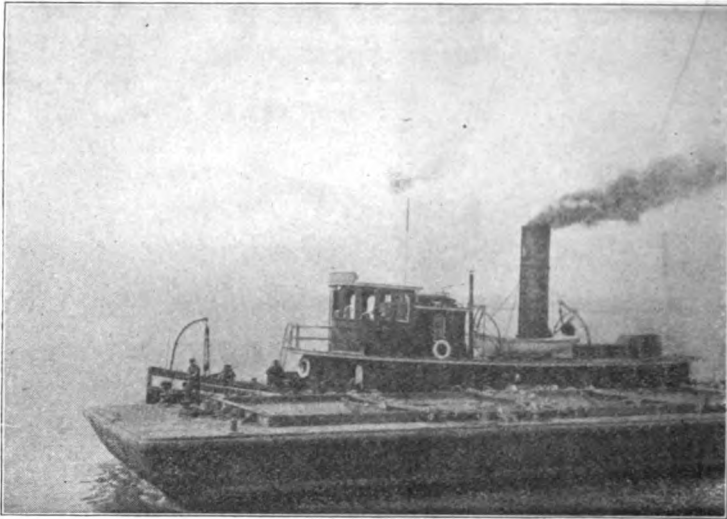
"Thirty-seven," said a little girl eagerly.

He wrote "73" on the board. Nothing was said.

"Well, some one else give me a number."

"Fifty-seven," said another child.

He wrote "75" on the board, and smiled knowingly at the teacher when nothing was said. He called for a third number and fairly gasped at the indignation manifested by a small red-faced urchin, who said: "Seventy-seven, and see if you can change that."—Ladies' Home Journal.



One of the hopper scows used by the Dominion Government, whose dumping doors are operated by No. 15 Little Giant Motors.



Showing method of operating the dumping doors with No. 15 Little Giant Motor.

Novel Use for Little Giant Drill.

New uses for pneumatic tools are being discovered every day. A novel application of the No. 15 T. C. Little Giant Compound Reversible Reaming and Tapping Machine has just been reported by the Holden Co. of Montreal, Canada, sales agents for the Chicago Pneumatic Tool Co. The Department of Public Works of the Dominion Government has a number of hopper scows, which are used on the various dredging jobs they have on hand, on one of which—the widening of the channel to relieve the current in Montreal harbor—they are at present engaged.

Above photo shows the type of hopper scow, which is an all-steel scow, having a capacity of 305 cu. yds., with five containing pockets. The bottom of each pocket is closed by two heavy doors, which are 18 feet long by $4\frac{1}{2}$ feet wide, 8 inches thick. These were formerly wound up by a special hand wrench, and took six to eight men from forty minutes to one hour to close the doors in all pockets. By using the No. 15 Little Giant Drill Motor they can do the same work in twenty minutes with two



Progress view of Chicago's new Municipal Pier, whose 160,000 rivets were driven with Boyer Hammers.

men. Hence, they not only save considerable time, but have cut down the labor expense as well.

The particular dredge engaged on this work is No. 110, under Captain MacIninch. It has a capacity of 1,500 yards per ten-hour day.

On a Party Line.

On a Sunday afternoon an esteemed party named Smith casually remarked something about dinner, whereat his wife wearily sighed.

"John," said she, "I am too dead tired to cook tonight. Suppose we visit one of the neighbors and take a chance on being invited to stay for dinner."

"All right," was the ready rejoinder of willing father. "How about the Browns?"

"Not on your life!" quickly replied mother. "The Browns are going to have pork and cabbage. I heard Mrs. Brown order it over the party telephone. The Greens ordered chicken."

Boyer Hammers Drive 160,000 Rivets in Municipal Pier.

Above is a view of the Municipal Pier looking west from the Terminal Building as it appeared on September 7th. As stated in our September issue, the freight and passenger building is two stories high and runs along both sides of the pier, with a 100-foot roadway between. It is 2,340 feet long, with 117 bays or panels on each side. As there are 30 tons of steel on each bay, the total amount of steel used is about 7,000 tons.

Boyer Hammers were used exclusively to drive the rivets in this structure, the total number being 160,000—all $\frac{3}{4}$ inch. Mr. Geo. E. Burtscher, superintendent for the Kelly-Atkinson Construction Co., who is doing the erection work, tells us that some of the Boyer Hammers used on this work have been in continuous service for upwards of five years.



New U. S. Custom House, Boston.

Pneumatic and Electric Tools Help to Make Boston Beautiful.

The new United States Custom House, with its imposing tower, is one of the new points of interest in Boston. The new structure is the result of remodeling and beautifying the old Boston Custom House, which was built in the form of a Greek cross and which required twelve years—from 1835 to 1847—to construct.

The walls, columns, and even the entire roof are of granite, and it rests upon three thousand piles, which forms foundation. Each of the massive fluted columns are 5 feet 2 inches in diameter, are 32 feet high and weigh over 40 tons. There are thirty-two of these columns. The porticos have each six columns. The granite dome at the intersection of the Cross terminates in a skylight, which is 25 feet in diameter. The cross-shaped rotunda is finished in the Grecian Corinthian style and is the main feature of the interior.

Over this dome has now been erected a granite tower of steel and granite to a height of 495 feet above the sidewalk level. If set side by side with Bunker Hill Monument would shoot up 274 feet above the apex of that celebrated shaft.

The office rooms will be located in this tower and will be used by the officers and employes. This tower contains four elevators and two stairways, and a pneumatic tube service is also provided. Each floor measures 65x75 feet.

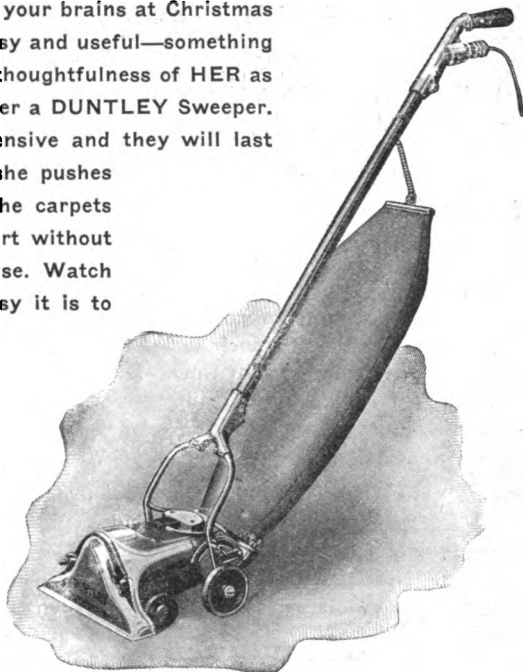
There is a large electric clock on top of the tower facing on the four sides, with a dial diameter of 21½ feet.

The cost of this tower is approximately \$2,000,000. The Perth Construction Company erected the steel and Norcross Brothers the granite work. Boyer hammers and Little Giant Drills were used in the erection work, and the Duntley Electric Drills were used on the interior work.

Mr. Wallace L. Pierce, chairman of the Board of Directors, was largely instrumental in securing from Washington the necessary appropriation for the rebuilding of this architectural wonder.

A Word to the Husband Who Wishes to get HER Some- thing for Christmas

YOU husbands who rack your brains at Christmas time for something classy and useful—something that will indicate your thoughtfulness of HER as no other present can—get her a DUNTLEY Sweeper. You know they're not expensive and they will last for years. Watch her as she pushes it for the first time over the carpets and rugs, picking up the dirt without scattering it all over the house. Watch her as she realizes how easy it is to handle, with no dust-pan to stoop to. But if you have enjoyed this part of it stick around a little longer and watch her when she empties the dust bag. Watch her when she sees the dirt, great masses of it, fall out into a heap on the paper she has spread on the floor. Surely she did not, nor did you, realize that there was half as much



DUNTLEY ELECTRIC SWEEPER

Price \$30.00

Complete with Attachments \$37.50

dirt in your whole house, and all of it picked up with so little effort. So again remember, for Christmas, get her a DUNTLEY Electric Sweeper; and help her enjoy life and spare her all the work and drudgery that you can.

Consult with us before buying her a vacuum cleaner for Christmas, for our line is complete at prices ranging from \$7.50 to \$150.00

Duntley Products Sales Company

732 Michigan Avenue, Chicago

IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air
and Electrical Appliances

BY THE

IDEAL POWER PUBLISHING CO.
1014 FISHER BUILDING
CHICAGO, U. S. A.

C. I. HENRIKSON	Editor
Vol. XI	NOVEMBER, 1915
	No. 10

TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year
Other Countries in Postal Union, 50 cents per year

ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our
subscription list.

Information Wanted.

The editor of this magazine is contemplating the preparation of an article dealing with the history of the origin and use of electric hand drills and would welcome information from anyone particularly as to the use of such drills in the year 1900 and prior to that time. He will be obliged to anyone for information on the subject.

Situations Wanted.

First-class tool repair man. Has had four years' experience with large locomotive works. Now in New York, but will go anywhere. Address Ad. 14, Ideal Power.

Practical engineer would like to connect with some large electric railway in the capacity of superintendent of machinery or roadmaster. Has had seven years' practical experience with some of the largest electric railways in the West and can furnish references. Has had experience with practically all makes of track and roadway machinery, including Duntley Electric Track Tools. Can handle men. Address Ad-12, Ideal Power.

A mechanical engineer, graduate of the Mass. Inst. of Tech., Boston, class of 1897, wants position as superintendent or works manager in a plant manufacturing iron or steel products. Has had

17 years experience in shop management and is competent to take charge of any shop, having such departments as boiler, foundry and forge. Address Ad-13, Ideal Power.

Little Giant Helps to Boost Washington.

Mr. G. C. Stevens, Washington representative of the Chicago Pneumatic Tool Company, for the Little Giant Truck, accompanied seventy other prominent Washington, D. C., merchants, all being members of the Retail Merchants' Association, on a recent two-day booster trip. The entire company traveled in automobiles, taking in the principal towns in Maryland, Virginia and West Virginia. The procession was headed by a Little Giant truck made up as a band wagon, which gave concerts in every town on the trip. Boys distributed advertising matter—newspapers, etc., gotten up for the special occasion.

The trip was two days of hard, continuous driving. On the second day the party encountered what Mr. Stevens declared to be the worst roads in the country. Notwithstanding the condition of the roads, however, the Little Giant, loaded with the band men and instruments, kept the lead. It held its own against the high-powered pleasure cars. It was as successful in climbing the Blue Ridge Mountains as the Packard and the Pierce-Arrow pleasure cars.

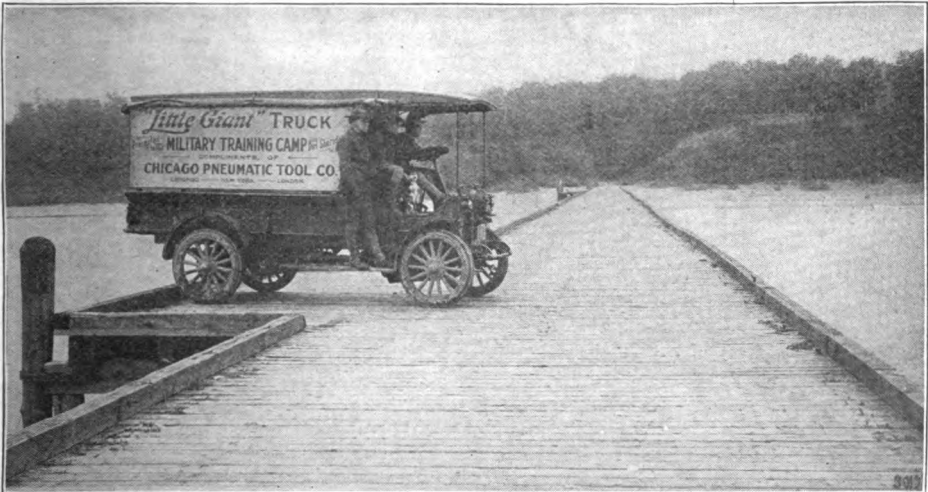
The Washington "boosters" became very enthusiastic at the remarkable performance of the "Little Giant," and before entering a town would hang a sign on it, "BIG GIANT." The car carried ten heavy musicians and their instruments and was heavily decorated. On the front were Little Giant pennants and Lincoln Highway stickers. On the back of the body was a sign, "THERE IS A LITTLE GIANT COMING YOUR WAY." On the sides were signs, "BOOST FOR AND BUY IN WASHINGTON." On the rear end was a sign, "LEADS THEM ALL—LITTLE GIANT TRUCKS."



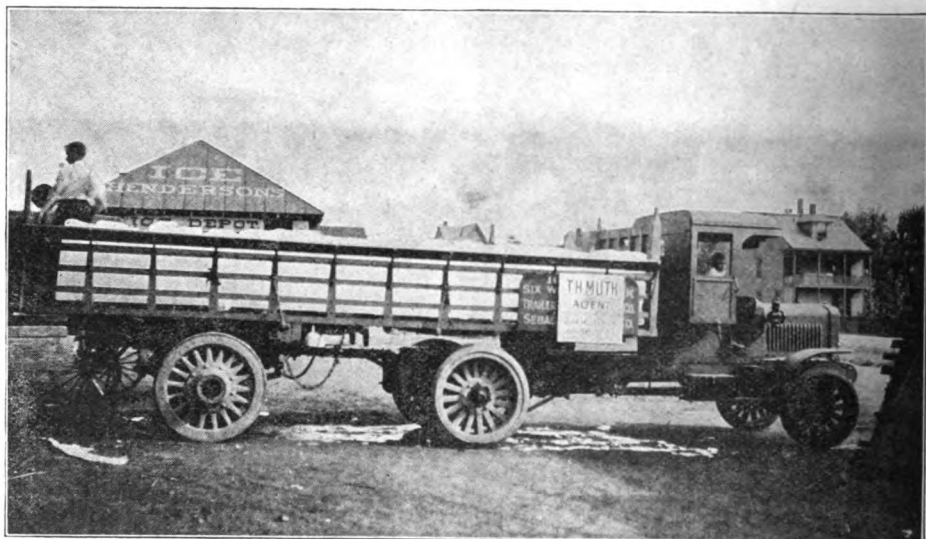
Little Giant Six-Wheel Truck on duty at Civilian Military Camp, Fort Sheridan, Illinois. When the encampment "broke up" the Little Giant Trucks received honorable discharge for efficient service and valorous conduct.



General View of the Encampment.



At Fort Sheridan—the Little Giant Truck is here shown on pier extending into Lake Michigan, backed up to unload troops on transport.

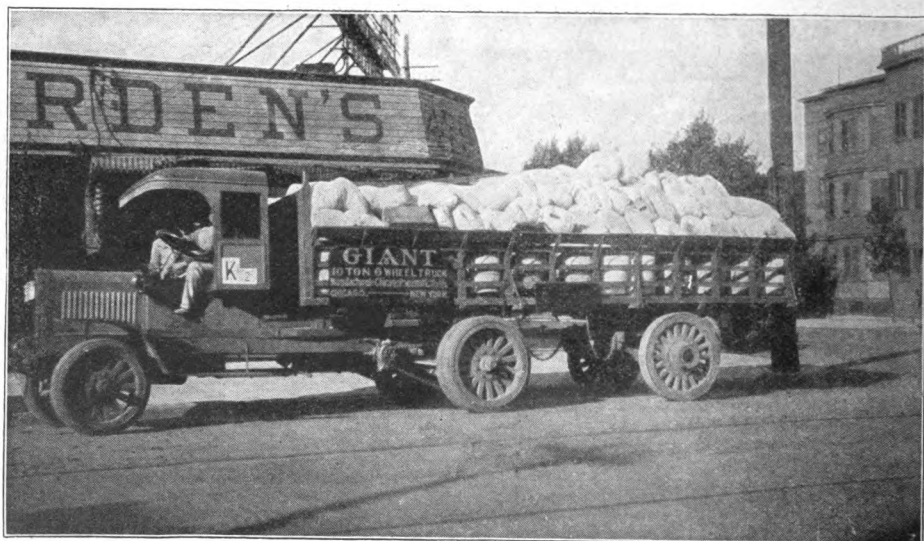


A Four-Ton General Motors Truck, equipped with Little Giant Six-Wheel Chassis, hauling eleven tons of ice.

Some Startling Performances of Little Giant Six Wheel Trucks.

Some very interesting demonstrations of the Little Giant Six Wheel Truck were recently made at Paterson, N. J., by T. H. Muth, who represents the Lit-

tle Giant Truck interests of the Chicago Pneumatic Tool Co. in that city. A six-wheel chassis was applied to a four-ton General Motors truck and some of the loads it was enabled to haul leave no room to doubt the remarkable increase



A Four-Ton General Motors Truck, equipped with Little Giant Six-Wheel Chassis, hauling twelve tons of flour.



Four-Ton General Motors Truck, equipped with Little Giant Six-Wheel body, hauling one box car load—165 bales—of hay.

of capacity that the six-wheel adjunct affords.

The six-wheeler carted 35 tons of flour for the Archibald Flour Company in three loads, one to Hackensack, one to Midvale and one to Garfield, N. J., from Paterson, N. J. The distance from Garfield to Paterson is 16 miles. One whole box carload of hay, 165 bales, was hauled for the Borden Condensed Milk Company from the car to the stable. An eleven-ton load of ice was carried from Paterson to Riverside, N. J., in ten minutes, for the Henderson Ice Company.

The passages of these immense loads through the streets of Paterson attracted a lot of attention. The truck was maneuvered in a manner quite impossible with any form of trailer or semi-trailer. As a matter of fact it was handled quite as easily as a four-wheeler.

In ordinary four-wheel truck construction the power is applied through the traction wheels, over which the greater portion of the load is placed. The traction wheels, therefore, both carry and push the load, but with the Little Giant Six-Wheel Truck only suf-

ficient of the load is placed over the driving wheels to secure traction and by this system of load distribution prolong the life of a tire 25 per cent.

An ordinary wagon, loaded to its limit, was recently attached to the rear of the Six-Wheel Little Giant, itself loaded to the guards, and the entire outfit—practically three times the capacity of the ordinary truck—was handled easily. While this combination of six-wheel truck with additional trailer may not be practical nor adapted to ordinary conditions, it demonstrates the great tractive power of the Little Giant power unit and shows that even with the added capacity of the larger six-wheel body, there is still a larger reserve of power on which to depend.

The six-wheeler has attracted the attention of many transportation experts from Europe as well as this country.

You Try It.

"What is a vacuum?" was asked of a civil service candidate. "I have it in my head," was the reply, "but can't quite get it out."



Little Giant arriving at the "Home of the Little Giant" after record run. See page 313.



Unloading the ton and a half of Motoreze Lubricating oil after record run. See page 313.



A Record Economic Run.

The economic run made by the Little Giant Truck from San Francisco to Los Angeles, after its journey over the Lincoln Highway from Chicago, was referred to in our last number.

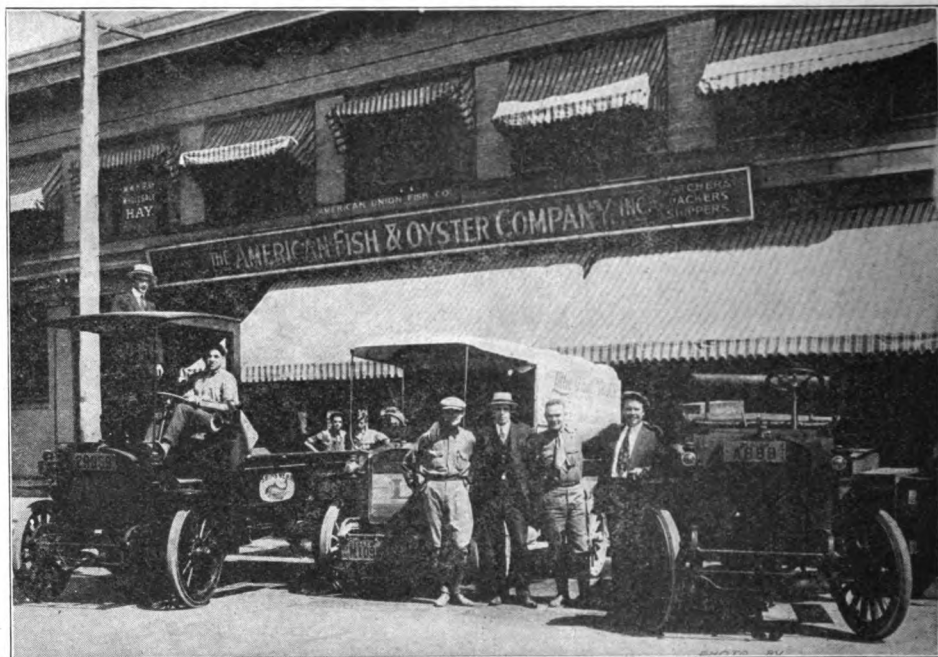
It will be remembered that the 492 miles of mountain roads were covered in 29 hours 30 minutes running time, averaging 16½ miles per hour. The most remarkable feature of this record trip was the low cost of operation, which totaled \$4.26, or less than one cent per mile. This was due in part to the cheap grade of distillate used—Union Distillate—and only six gallons of that. Four gallons of Motoreze lubricating oil and seven quarts of water made up the other items.

In the upper view of the opposite page, Mr. H. L. Miller, Los Angeles representative of the Little Giant, is shown extending the glad hand to Messrs. Phillips and Beardsley, who have just arrived. In the lower view,

the ton and a half of Motoreze Lubricating Oil, constituting the load of the Little Giant, is being unloaded at the warehouses of the Union Oil Company, who have three Little Giants in daily service.

The view above shows the Little Giant beside one of the 55,000-gallon tanks of the Union Oil Company.

A son of Erin was digging post holes one day when the boss rambled along to size up the job. Then, of course, some elocution. "How are you making out, Pat?" asked the boss, critically examining the hole. "Foine as silk," answered Pat, keeping right on with his work, "as yez will notice yersilf." "The work looks all right, Pat," jokingly responded the boss; 'but do you think you will ever be able to get all that dirt back in the hole again?" "No, sor," came the rapid reply of Pat, "not as it is now, sor; but it's me intintion to dig the hole a little daper."



Little Giant Lincoln Highway Truck and party lined up in front of American Union Fish company's establishment, Los Angeles. This firm has nine Little Giant Trucks in daily service.

The Bluff That Failed.

Pat was a new man in camp. Saturday night the boys were lined up to the bar and just as Pat poured his whiskey a "friend" yelled, "Fire out in front." Pat ran to the door, looked out and returned. His whiskey was gone! Pat ordered another. "Man dropped dead," yells another "friend," rushing in through the door. Pat satisfied his curiosity and found on his return that his liquor had again disappeared. "Some joker," said Pat, "but I'll fool 'em, if they ever spring that trick on me ag'in." Pat called for his drink and then wrote on a card, "I spit in this glass," and placed the card over the well filled tumbler. Pat walked to the door in response to another "call" and returned.

He was gratified to note that the liquor had not been disturbed, and quaffed it with relish. As he smacked his lips, he looked on the other side of the card, on which he read this delightful intelligence in the uncertain scrawl of some "friend": "So did I."

Working With a Mike-rometer.

At one of the factories of the Chicago Pneumatic Tool Company, a new employee who had only recently immigrated from Ireland, was asked by the foreman to measure a wall, and was given a rule for the purpose. Mike returned with the information that the wall was "as long as me rule, me arms and two bricks." He was next day transferred to another department, where accurate measurements are seldom taken.

He Wasn't a Storekeeper.

They tell a story about a country lad who went to New York and tried for a job on the police force.

One of the questions was: "A man buys an article for \$12.25 and sells it for \$9.75; does he gain or lose on the transaction?"

After pondering over the question, our rural friend finally answered in this way: "He gains on the cents, but loses on the dollars."



SIMPLATE

DISC VALVES

are used in

"Chicago Pneumatic"
Compressors

Durable — Efficient — Noiseless

Send for Bulletin 213, giving
full details

CHICAGO PNEUMATIC TOOL CO.

1014 Fisher Building, Chicago

**Branches
Everywhere**

52 Vanderbilt Ave., New York

INNER VALVE
ENTIRELY
SEPARATE
AND
INDEPENDENT
OF INTERMEDIATE &
OUTER VALVE

LARGE PORTS IN
VALVE KEEPER
MINIMUM RE-
STRICTION TO
THE FLOW OF
THE AIR FROM
VALVE



METHOD OF GUIDING

VALVE STUD
NUT-A-L-A-M
STANDARD —
WITH SPLIT
PIN COMPLETES
A RIGID CON-
STRUCTION

VALVE KEEPER
OF SPECIAL MAT-
ERIAL HAVING
SUPERIOR WEAR-
ING QUALITIES
AND HIGH TENSILE
STRENGTH

SIMPLATE

INTERMEDIATE VALVE
ENTIRELY
SEPARATE
AND
INDEPENDENT
OF INNER AND
OUTER VALVE

OPENINGS OVER
SPRING RECESS
INSURE CLEAN
SPRING POCKETS
NO TENDENCY
FOR CARBON DE-
POSIT ON SPRING

OUTER VALVE
ENTIRELY
SEPARATE
AND
INDEPENDENT
OF INTERMEDIATE &
INNER VALVE

VOLUTE SPRING
OF CRUCIBLE-
STEEL - DRAWN
AT PROPER TEM-
PERATURE AND
SUBJECTED TO
RIGID COMPRES-
SION TESTS

NARROW SEAT
INSURES A
TIGHT JOINT
IN AIR CYLINDER
WITHOUT THE
USE OF GASKETS

VALVE SEAT
OF SPECIAL
METAL-HAVING
SUPERIOR WEAR-
ING QUALITIES
AND HIGH TEN-
SILE STRENGTH

VALVE STUD
OF NICKEL STEEL
PRESS FIT IN
VALVE SEAT IN-
SURING TIGHT-
NESS AND EASE
OF ASSEMBLING

LARGE FREE
AREA THROUGH
PORTS IN THE
VALVE SEAT
RESISTANCE TO
THE FLOW OF
AIR IS SLIGHT

THREE GUIDES
FOR EACH VALVE
WITH PROPER
FIT TO PREVENT
VALVE COCKING
OR OTHERWISE
FAILING TO SEAT

Advantageous Features of Simplate Valves

When writing to advertisers please mention Ideal Power.

After Inventory

We find ourselves overstocked on various items of raw material as listed below and solicit inquiries for prices which we are sure will be attractive.

VALVES.

50 1½"	Brass Angle Valves.	150 ¾"	Brass Angle Valves.
25 1"	Brass Angle Valves.	200 ¼"	Brass Angle Valves.
150 ¾"	Brass Angle Valves.	50 2"	Brass Angle Valves.
5 7"	Iron Body Crane Angle Valves, (Flanged Type.)		
2 7"	Iron Body E. C. & B. Angle Valves, (Flanged Type.)		
16 3"	Screwed Type Kelley and Jones Globe Valves, (Iron Body.)		
2 2"	Flanged Crane Globe Valves, (Iron Body.)		
2 2"	Flanged W. T. Co. Globe Valves, (Iron Body.)		
1 3"	Flanged Powell Globe Valves, (Iron Body.)		
1 3"	Flanged Crane Globe Valves, (Iron Body.)		
10 3"	Flanged W. T. Co. Globe Valves, (Iron Body.)		
1 3½"	Flanged W. T. Co. Globe Valves, (Iron Body.)		
5 4"	Flanged W. T. Co. Globe Valves, (Iron Body.)		
6 7"	Flanged Jenkins Globe Valves, (Iron Body.)		

UNLOADERS.

16 2"	Globe Unloaders.	6 2"	Richards I. and P. Unloaders.
2 3"	Globe Unloaders.	3 3"	Richards I. and P. Unloaders.
5 4"	Globe Unloaders.	7 3½"	Richards I. and P. Unloaders.
2 4½"	Globe Unloaders.	2 4"	Richards I. and P. Unloaders.
3 3"	Angle Unloaders.	3 4½"	Richards I. and P. Unloaders.

TUBING.

100 Pcs. 2¾" o.d.; 2 1/16" i d; 5/32" wall, (Ohio Seamless), 19" long.

U. S. STANDARD SEMI-FINISHED HEX NUTS.

250 2"	Standard.	240 2¼"	Check.
150 2½"	Standard.	300 2½"	Check.
200 2"	Check.		

TODD SPIRAL PACKING.

10 Boxes	⅜".	4 Boxes	½".
4 Boxes	⅝".	2 Boxes	⅝".
2 Boxes	⅞".		

ELECTRICAL EQUIPMENT.

18 Model B Motsinger Auto Sparkers, (Second Hand, in good condition.)
300 Model 02 Wico Igniters.

1 Genl. Elec. Type "I", Four Pole, 20 H.P., 900 R.P.M., 3 Ph., 30 Cycle,
440 Volt, Form "K" Squirrel Cage Induction Motor, No. 160445
(New.)

BELT LACING MACHINE.

1 Birdsboro Belt Lacing Machine, (Practically New.)

CHICAGO PNEUMATIC TOOL COMPANY

1014 Fisher Building
CHICAGO

BRANCHES EVERYWHERE

52 Vanderbilt Ave.
NEW YORK

From Our Railroad Department.

Mrs. Norah Mulvaney one day met her friend, Mrs. Bridget Carr, who had in her arms her twelfth child.

"Arrah now, Bridget," said Norah, "an' there ye are wid another little Carr in yer arms."

"Another it is, Mrs. Mulvaney," replied her friend, "an' it's me that's hopin' 'tis the caboose."

Losing Faith.

Old Lady—"I don't believe this sure-cure tonic is a-goin' to do me any good."

Friend—"It's highly spoken of in the papers."

Old Lady—"Yes; but I've taken forty-seven bottles, and I don't feel a bit better. I tell you what it is, Sarah; I'm beginning to think these newspaper editors don't know everything."

Explanation.

"Do you mean to say such a physical wreck as he gave you that black eye?" asked the magistrate.

"Sure, your honor, he wasn't a physical wreck till after he gave me the black eye," replied the complaining wife.

Mary had a little lamb,

A lobster and some prunes,

A glass of milk, a piece of pie,

And then some macaroons;

It made the naughty waiters grin

To see her order so,

And when they carried Mary out

Her face was white as snow.

The Lure of the Mirage.

A traveler, thinking to be facetious, told the darky ferryman that he had no money to pay his passage.

"But," said the colored man, "it don't cost only five cents to cross dis ferry."

"I haven't got any money at all."

Suddenly the darky looked resigned.

"Don't you mind, boss," said he earnestly, "because a man dat ain't got five cents is jes' as well off on dis side of the river as on de odder."—Exchange.

Wouldn't You?

Passing through a military hospital, a distinguished visitor noticed a private in one of the Irish regiments who had been terribly injured.

To the orderly the visitor said: "That's a bad case. What are you going to do with him?"

"He's going back, sir," replied the orderly.

"Going back!" said the visitor, in surprised tones.

"Yes," said the orderly. 'He thinks he knows who done it.'

Appraised.

Callers were at the door and Bobbie was told to show them into the parlor. He did so, and while his mother was fixing herself up, he sat there rather embarrassed. Presently, seeing the visitors glancing around the room, he said:

"Well, what do you think of our stuff, anyway?"

Corporal (to soldier reporting sick)—"What's the matter with you?"

Tommy Atkins—"Pain in my habdomen."

Corporal—"Habdomen be 'anged! Stomick, you mean. It's honly officers as 'as habdomens."—Boston Transcript.

Placard at a moving-picture show: "Young children must have parents."

In a barber's shop window: "During alterations patrons will be shaved in the back."

Sign in a Tremont street store: "Empty boxes—suitable for Christmas gifts."

In a tailor's shop: "We dye for others; why not let us dye for you?"

In a clothing store: "These pants will look better on your legs than on our hands."

A silversmith has a place next door to a restaurant. The former having put up a placard: "Jewelry of all kinds plated," the restaurant keeper followed with this: "Oysters and little neck clams plated."



Truth and trouble play no favorites.

It's easy for a woman to paint a pretty face—if she has it.

Only a woman of tact can smile when she hears a rival praised.

And many a good husband has the courage of his wife's convictions.

Sometimes a man's past takes a short cut and heads off his future.

A woman isn't necessarily level-headed because her hat is on straight.

But a man usually drops his prosperous look when a bill collector calls.

A homely girl can seldom understand why people think some men are mashers.

The street faker reaps a golden harvest when he faces a crowd that wants something for nothing.

What has become of the old-fashioned boy who would rather stay home and work than go to school?

After acquiring all the knowledge he can from books, many a man takes a postgraduate course by marrying a widow.

Agitation is the antidote for stagnation.

And many a single man is guilty of double dealing.

Smiles make a better salve for trouble than do frowns.

Frequently a man thinks he is charitable because he gives advice.

A little change is a good thing, but a big roll of bills is better.

It does seem queer that most of the "good fellows" have a lot of bad habits.

Perhaps a man can write a sensible love letter, but he never does.

Sometimes two women can stop talking about each other long enough to swap kisses.

Such things as come to the man who waits are seldom the things he has been waiting for.

If every man were taken at his own value there wouldn't be half enough halos to go around.

Every time a woman injects an exclamation point into her conversation she gathers momentum for a fresh start.

Sometimes you can judge by appearances. Many a woman appears to be strait laced because she really is laced that way.

The Chicago Pneumatic Tool Co.

MANUFACTURE THE FOLLOWING
PNEUMATIC TOOLS, APPLIANCES, ETC.

After Coolers	Grinders, Portable Electric
Air Compressors	Hammers, Riveting
Air Economizers	Hammers, Chipping and Calking
Air Forge, Chicago	Hammers, Stone
Air Motors	Hoists, Duntley Electric
Air Receivers	Hoists, Pneumatic Geared
Air Jacks	Hoists, Straight Lift
Airoilene	Holder-on
Airoilene Grease	Hose, Special High Grade
Angle Gears, Little Giant	Hose Clamp Tool
Angle Gears, Boyer	Hose Couplings (Univ'sal)
Annealing Machines	Inter-Coolers
Armour Scaling Machines	Magnetic Old Man
Automatic Oiling Devices	Oil Driven Compressors
Bell Ringers, Little Giant	Oil Engines
Blow-off Cocks, Little Giant	Painting Machines
Chucks, Drill	Pipe Bending Machines
Chucks, Expanding	Pneumatic Saws
Commercial Car	Pneumatic Plate
Drift Bolt Drivers	Straighteners
Drills, Boyer	Railway Motor Section Cars
Drills, Keller	Reamers
Drills, Little Giant	Reheaters
Drills, Rock	Rivet Busters
Drilling Stands	Riveters, Jamb
Elevators	Riveters, Yoke
Electric Drills, Duntley	Riveters, Compression
Electric Grinders, Duntley	Sand Rammers
Engineers' Valves	Sand Sifters
Flue Cutters, Chicago	Speed Recorders
Flue Rollers, and Ex- panders, Little Giant	Staybolt Chucks
Gas Engines	Stone Dressers
Gasoline Driven Com- pressors	Staybolt Nippers
Gasoline Engines	Vacuum Pumps
	Winches, Portable

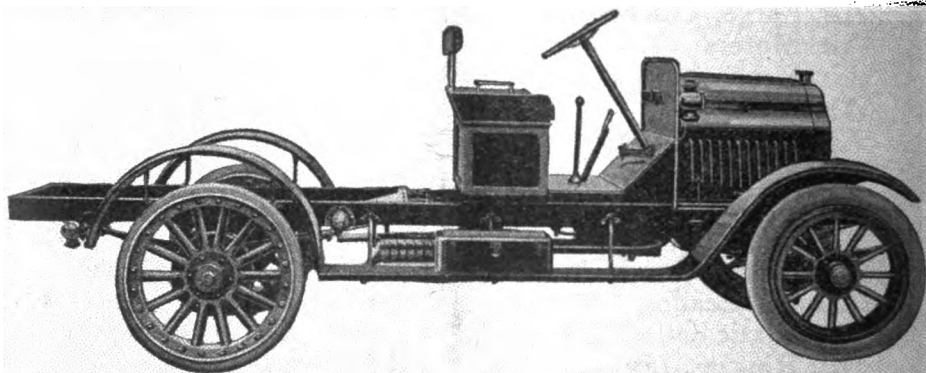
ANNOUNCING

The *"Little Giant"* Truck

WORM DRIVE

3/4 Ton Capacity

2 Ton Capacity



The New WORM DRIVE Model Incorporates the Following

"Standardized" Units:

Timken Worm Drive	Continental Motor
Fetter Radiator	Schebler Carburetor
Brown Lipe Transmission	Spicer Universal Joints
Eisemann High Tension Magneto	
Chrome Vanadium Steel Springs	
Special Alloy Pressed Steel Frame	
	Ross Non-reversible Steering Gear
	Garland Ventilator

ASK FOR PRICES AND SPECIFICATIONS

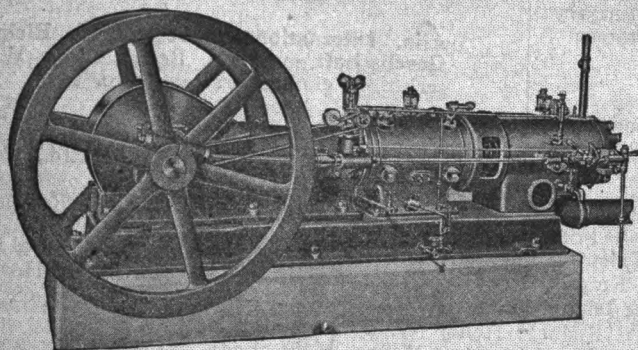
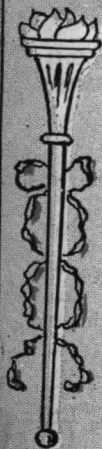
Chicago Pneumatic Tool Co.

General Offices
1014 Fisher Building
Chicago.

Sales Department
1470 Michigan Avenue
Branches Everywhere.

Eastern Office
52 Vanderbilt Avenue
New York.

IDEAL POWER



N-SO Chicago Pneumatic Fuel Oil Compressor
See article on page 327

PUBLISHED MONTHLY BY
Chicago Pneumatic Tool Company
 CHICAGO NEW YORK

Chicago Pneumatic Tool Company

Chicago Office, Fisher Bldg.

Eastern Office, No. 52 Vanderbilt Ave.

CHICAGO**NEW YORK**

BRANCH OFFICES

Boston: 185 Pleasant Street
 Birmingham: 834 Brown-Marx Bldg.
 Buffalo: 503 Ellicott Square Bldg.
 Cincinnati: 1008 Mercantile Lib. Bldg.
 Cleveland: 1241 E. 49th St.
 Cleveland: 2122 Euclid Ave.
 Detroit: 2nd Ave. and Amsterdam St.
 El Paso: 303 San Francisco St.
 Erie, Pennsylvania.
 Franklin, Pennsylvania
 Los Angeles: 241-243 S. Los Angeles St.
 Los Angeles: 806 Title Insurance Bldg.
 Louisville, Ky.: 31 Todd Bldg.
 Philadelphia: 1740-42 Market St.
 Pittsburgh: 10 and 12 Wood St.
 Portland, Ore.: 46-48 Front St.
 Richmond, Va.: 1004 Mutual Bldg.
 Salt Lake City: 117-119 W. 2nd South St.
 Seattle: 122 King St.
 Spokane: Cor. R. R. and Wall St.
 St. Louis: 813-19 Hempstead St.
 St. Paul: Pioneer Bldg.
 San Francisco: 71 First St.

FOREIGN

Canada: { Montreal, **Canadian Pneumatic Tool Co.**
 { The Holden Co., Ltd., Montreal, Toronto, Winnipeg.
British Columbia: Vancouver, Holden Co., Ltd., 542 Pender Street, West.
Mexico: Mexico City, The General Supply Co., Av. Isabel La Catolica,
 No. 51.
Northern Mexico: (Sonora and Chihuahua), Don A. Carpenter & Co., El
 Paso, Texas.
Great Britain: { London, **The Consolidated Pneumatic Tool Company,**
Spain: { Ltd., 9, Bridge Street, Westminster, S. W
Portugal: {
France: Paris, Anciens Etablissement, Glaenger & Perreaud, 18-20 Fau-
 bourg du Temple.
Belgium: Brussels, The Consolidated Pneumatic Tool Co., Ltd., 22 Chaus-
 see de Forest, Porte de Hal.
Italy: Milan, The Consolidated Pneumatic Tool Co., Ltd., via A. Cap-
 pellini 7.
Germany:
Austria Hungary:
Balkan States:
Norway:
Sweden:
Holland:
Switzerland:
Denmark:
Russia: Petrograd; Phoenix Engineering Works Co., Ltd., Polustrov-
 skaya. Quay No. 39.
India: { Bombay, **Consolidated Pneumatic Tool Co., Ltd.,** Rampart Row,
 Fort.
 { Calcutta, The Consolidated Pneumatic Tool Co., Ltd., 8 Lal Bazar St.
Japanese Empire: Tokyo, Osaka, Seoul, Dairen, The F. W. Horne Co.
Philippine Islands: Manila, Frank L. Strong Machinery Co., 64-68 Echague.
Australia: Sydney, Henry W. Peabody & Co.
New Zealand: Wellington, Henry W. Peabody & Co.
South America: Buenos Aires, Argentina, Evans, Thornton & Co.
South Africa: Johannesburg, The Consolidated Pneumatic Tool Co., Ltd.,
 190 Main Street.

BULLETIN DIRECTORY

Requests for these Bulletins should be directed to our Chicago or New York offices or to our nearest branch as shown on inside front cover.

PNEUMATIC TOOLS

- 121...Pneumatic Hammers and Foundry Appliances.
- 124...Pneumatic Riveting, Chipping, Calking and Stone Hammers.
- 125...Pneumatic Yoke, Jam and Shell Riveters, Holders-on, Drift Bolt Drivers, Rivet Busters.
- 126...Compression Riveters.
- 127...Pneumatic Drills, Corner Drills, Reamers, Wood Boreers, Flue Rolling and Tapping Machinery and Grinders.
- 128...Miscellaneous equipment for Pneumatic Drills, viz: Chucks, Twist Drills, Reamers, Augers, Flue Cutters, Flue Expanders, Angle Gears.
- 129...Hose, Hose Couplings and Hose Clamp Tools.
- 130...Lubrication of Pneumatic Tools.
- 131...Miscellaneous Tools, viz: Pipe Benders, Air Forge, Bolt Nippers, Drilling Stands, Blow-off Cocks, Bell Ringers, Drill Repair Vises, Painting Machines.
- 132...Pneumatic Motors and Pneumatic Geared Hoists.
- 133...Cylinder Air Hoists and Jacks.

ELECTRIC TOOLS

- E-22...Heavy Duty Electric Drills, Alternating Current.
- E-25...Electric Hoists.
- E-31...Duntley Electric Drilling Stands.
- E-32...Duntley Track Drills.
- E-33...Heavy Duty Electric Drills, Direct Current.
- E-34...Duntley Electric Hammer Drill.
- E-35...Duntley Universal Electric Drills.
- E-36...Duntley Electric Grinders.

AIR COMPRESSORS AND FUEL OIL ENGINES

- 34-A...Class "G" Steam Driven "Chicago Pneumatic" Compressors.
- 34-B... "Chicago Pneumatic" Power Driven Compressors.
- 34-C... "Chicago Pneumatic" Gasoline and Fuel Oil Engine Driven Compressors.
- 34-D... "Chicago Pneumatic" Corliss Compressors, Steam Driven.
- 34-F... Design and Construction Class "G" "Chicago Pneumatic" Compressors.
- 34-G... Air Receivers, Aftercoolers, Reheaters, etc.

- 34-H...General Instructions for Installing and Operating "Chicago Pneumatic" Compressors.
- 34-I...Instructions for Installing and Operating N-SS and N-SB Compressors.
- 34-J...Instructions for Installing and Operating Class O Compressors.
- 34-K...Class N-SO and N-SG Fuel Oil and Gas Driven Compressors.
- 34-L...General Pneumatic Engineering Information.
- 34-M...Class "O" "Chicago Pneumatic" Steam and Power Driven Compressors.
- 34-N...Class N-SS and N-SB Single Enclosed Compressors.
- 34-O...Instructions for the Installation and Care of "Chicago Pneumatic" Gasoline Driven Air Compressors.
- 34-R...Class L-SS and L-SB New Enclosed Type Self-Oiling "Chicago Pneumatic" Compressors.
- 34-S...Small Power Driven Compressors.
- 34-U...Instructions for Installing and Operating Class N-SO Fuel Oil Compressors.
- 34-V...Instructions for Installing and Operating Giant Fuel Oil Engines.
- 34-W...Class A-O Fuel Oil Engines.
- 34-X...Class A-G Gas and Gasoline Engines.
- 213...Simplex Flat Disc Valves.
- 224...Compressor Booklet.

ROCK DRILLS AND HAND DRILLS

- 148...Chicago Valveless Hand Drills.
- 149...Chicago Portable Mine Hoist.
- 150...Chicago Coal Drills.
- 151...Chicago Slogger Rock Drills.
- 152...Chicago Gatling Drills.
- 153...Chicago Sinker.
- 154...Chicago Stoper.
- 172...Chicago Plug and Feather Drill.
- 216...Hummer Hammer Drills.

LITTLE GIANT TRUCK

- Catalogue No. 222.
- Folder 223, 1 and 1½-ton and Six-wheel Little Giant Trucks.

ROCKFORD and MISCELLANEOUS

- 42...Boyer Speed Recorder.
- 43...Rockford Railway Motor Car.
- 117...Lubrication of Rockford Cars.
- 119...Operation of Rockford Cars.
- 166...Boyer Speed Recorder with Clock Attachment.

CHICAGO PNEUMATIC TOOL COMPANY

1014 Fisher Bldg., CHICAGO

Branches Everywhere

52 Vanderbilt Ave., NEW YORK

CONVENTIONS.

Feb. 28 to Mar. 3, 1916—American Road Builders' Ass'n. at Pittsburgh, Pa.
 Mar. 21-23, 1916—American Railway Engineering Ass'n. at Chicago.
 Mar. 21-23, 1916—National Railway Appliance Ass'n. at Chicago.
 May 2-5, 1916—Air Brake Ass'n. at Atlanta, Ga.
 May 23-26, 1916—Master Roller Makers' Ass'n. at Hotel Hollenden, Cleveland, O.
 June, 1916—American Institute of Electrical Engineers.
 June, 1916—International Railway Fuel Ass'n. at Chicago.
 June 14, 1916—Master Car Builders' Ass'n. at Atlantic City.
 June 19, 1916—American Railway Master Mechanics' Ass'n. at Atlantic City, N. J.
 Sept., 1916—Railway Signal Ass'n. at Grand Hotel, Mackinac Island, Mich.
 Sept. 19-22, 1916—Roadmasters and Maintenance of Way Ass'n. at New York City.
 Oct. 17, 18 and 19, 1916—Maintenance of Way Master Painters' Ass'n. of United States and Canada at Philadelphia.
 Oct. 17-19, 1916—American Railway Bridge and Building Ass'n. at New Orleans, La.

ENGINEERING SOCIETIES, ETC.

American Association of Railroad Superintendents (General)—General Secretary, E. H. Harmon, St. Louis, Mo.
 American Concrete Institute—Secretary, Edw. E. Krauss, Harrison Bldg., Philadelphia, Pa.
 American Electric Railway Association—Secretary-Treasurer, E. B. Burritt, 8 W. 40th St., New York, N. Y.
 American Highway Association—Executive Secretary, I. S. Pennybacker, Colorado Bldg., Washington, D. C.
 American Institute of Electrical Engineers—President, John J. Carty, 15 Dey St., New York; Secretary, F. L. Hutchinson, 33 W. 39th St., New York.
 American Institute of Mining Engineers—Secretary, Bradley Stoughton, 29 W. 39th St., New York City.
 American Mining Congress—Secretary, J. F. Callbreath, Jr., 1021 Munsey Bldg., Washington, D. C.
 American Order of Steam Engineers—Supreme Chief Engineer, J. W. Fairmont, Philadelphia, Pa.; Supreme Corresponding Engineer, Edw. A. Reboul, 1110 Earl St., Philadelphia, Pa.
 American Railway Engineering Association—Secretary, E. H. Fritch, 1011 Karpen Bldg., Chicago, Ill.
 American Road Builders' Association—Secretary, E. L. Powers, 180 Nassau St., New York.
 American Society of Civil Engineers—Secretary, Chas. Warren Hunt, 220 W. 57th St., New York City.
 American Society of Engineering Contractors (Inc.)—Secretary, J. R. Wenlinger, South Ferry Bldg., New York City. Meetings: Second Thursday every month.
 American Society of Heating and Ventilating Engineers—Secretary, J. J. Blackmore, 29 W. 39th St., New York City.
 American Society of Mechanical Engineers—Secretary, Calvin W. Rice, 29 W. 39th St., New York City.
 American Society of Naval Engineers—Secretary-Treasurer, Lieut. A. T. Church, U. S. N., Navy Department, Washington, D. C.
 American Water Works Association—Secretary J. M. Diven, 47 State St., Troy, N. Y.
 Association of Civil Engineers, Cornell University—President, A. F. Williams, Ithaca, N. Y.; Secretary, A. S. Patrick, Ithaca, N. Y.
 Association of Engineering Societies—Chairman Board of Managers, John W. Woermann, 428 Custom House, St. Louis, Mo.; Secretary, Joseph W. Peters, 3517 Olive St., St. Louis, Mo.
 Association of Railway Electrical Engineers—Secretary, J. A. Andreuccetti, C. & N. W. Ry. Co., Chicago, Ill.
 Boston Society of Civil Engineers—Secretary, S. Everett Tinkham, 715 Tremont Temple, Boston, Mass.

Canadian Society of Civil Engineers—Secretary, Clement H. McLeod, 176 Mansfield St., Montreal, Can.
 Canadian Railway Club—Secretary, James Fewell, Grand Trunk Ry., Montreal, Que.
 Central Railway Club—Secretary, H. D. Vought, 95 Liberty St., New York.
 Civil Engineers' Society of St. Paul—Secretary, Edw. J. Dugan, Room 7, Old State Capitol Bldg., St. Paul, Minn.
 Cleveland Engineering Society—Secretary, David Gaehr, Chamber of Commerce Bldg., Cleveland, Ohio.
 Connecticut Society of Civil Engineers—President, C. C. Elwell, New Haven, Conn.; Secretary-Treasurer, J. Frederick Jackson, Box 1304, New Haven, Conn.
 Detroit Engineering Society—Secretary-Treasurer, E. M. Walker, 532 M. C. Sta., Detroit, Mich.
 Engineering Association of the South—Secretary-Treasurer, W. Harwell Allen, 918 Stahlman Bldg., Nashville, Tenn.
 Engineers' Club of Cincinnati—Secretary, E. A. Gast, P. O. Box 333, Cincinnati, Ohio.
 Engineers' Club of Minneapolis—President, L. S. Gillette, 74 Chamber of Commerce, Minneapolis, Minn.; Secretary, Louis Clousing, 2411 Oakland Ave., Minneapolis.
 Engineers' Club of Philadelphia—Secretary, L. H. Kenney, 1817 Spruce St., Philadelphia, Pa.
 Engineers' Club of St. Louis—Secretary, W. W. Horner, 5203 Maple Ave., St. Louis, Mo.
 Engineering Society of Purdue University, Lafayette, Ind.—Secretary, C. B. Penrod, 123 State St., W. Lafayette, Ind.
 Engineering Society of Buffalo—President, John Younger; Secretary, W. J. Gamble, 295 Ontario St.
 Engineers' Club of Pennsylvania—Secretary, E. R. Dasher, 31 S. Front St., Harrisburg, Pa.
 Engineers' Society of Northampton, Pennsylvania—Secretary, T. F. McKenna, care of Engineers' Club, Scranton, Pa.
 Engineers' Society of Western Pennsylvania—Secretary, Elmer K. Hiles, 2511 Oliver Bldg., Pittsburgh, Pa.
 Illinois Society of Engineers and Surveyors—Secretary, E. E. R. Tratan, Wheaton, Ill.
 Indiana Engineering Society—Secretary, Chas. Brossmann, Indianapolis, Ind.
 International Railway Congress Association—President (of the International Commission), W. Toudeller, 11 Rue de Louvain, Brussels, Belgium; Secretary, General L. Welsaenbruch, same address.
 Iowa Engineering Society—Secretary-Treasurer, Prof. J. H. Dunlap, Iowa City, Iowa.
 Lake Superior Mining Institute—Secretary, A. J. Yungbluth, Ishpeming, Mich.
 Louisiana Engineering Society—President, L. C. Datz; Secretary, W. T. Hogg, P. O. Sta. 20, New Orleans, La.
 Michigan Engineering Society—President, Delmar E. Teed, Cadillac, Mich.; Secretary, Samuel J. Hoexter, Ann Arbor, Mich.
 Montana Society of Engineers—President, Martin H. Gerry, Jr., Helena, Mont.; Secretary, Clinton H. Moore, Butte, Mont.
 New England Association of Commercial Engineers—Secretary, P. S. Eggleston, Jr., 53 Devonshire St., Boston, Mass.
 New England R. R. Club—Secretary, W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass.
 New York Railroad Club—Secretary, Harry D. Vought, 95 Liberty St., New York, N. Y.
 Ohio Engineering Society—President, W. F. Schepflin, Fremont, O.; Secretary, Jno. Laylin, Hartman Bldg., Columbus, O.
 Ohio Society of Mechanical, Electrical and Steam Engineers—Secretary-Treasurer, Frank E. Sanborn, Ohio State University, Columbus, Ohio.
 Railway Club of Pittsburgh—Secretary, J. B. Anderson, Room 207, Penn. R. R. Station, Pittsburgh, Pa.
 Richmond Railroad Club—Secretary, F. O. Robinson, C. & O. Railway, Richmond, Va.
 Rochester Engineering Society—Secretary-Treasurer, F. C. Taylor, 34 Clinton Ave., Rochester, N. Y.
 St. Louis Railroad Club—Secretary, B. W. Frauenthal, Union Station, St. Louis, Mo.
 Southern & Southwestern Railway Club—Secretary, A. J. Merrill, Grant Bldg., Atlanta, Ga.

Toledo Society of Engineers—President, L. M. Gram, 1047 Spitzer Bldg., Toledo, O.; Secretary, L. T. Owen, 1047 Spitzer Bldg., Toledo, O. Regular meeting, second Friday in each month.

Utah Society of Engineers—Secretary, C. J. Ulrich, 321 Felt Bldg., Salt Lake City, Utah. Third Friday of each month, except July and August.

Vermont Society of Engineers—Secretary, Geo. A. Reed, Barre, Vt.

Western Railway Club—Secretary, J. W. Taylor, 1112 Karpen Bldg., Chicago, Ill.

Western Society of Engineers—President, Wm. B. Jackson, Harris Trust Bldg., Chicago; Secretary, J. H. Warder, 1735 Monadnock Bldg., Chicago.

MECHANICAL AND TRADE SOCIETIES.

Air Brake Association—Secretary, F. M. Nellis, 53 State St., Boston, Mass.

American Boiler Manufacturers' Association—President, W. C. Connelly, Ivanhoe Road and Nickle Plate B. E., Cleveland, O.; Secretary, J. D. Farasey, 37th St. and Erie Ry., Cleveland, O.

American Electric Railway Association—Secretary-Treasurer, E. B. Burritt, 8 W. 40th St., New York City.

American Electric Railway Manufacturers' Association—Secretary-Treasurer, H. G. McConaughy, Suite 1003, 165 Broadway, New York City.

American Foundrymen's Association—Secretary, A. O. Backert, 12th and Chestnut Sts., Cleveland, Ohio.

American Institute of Metals—Secretary-Treasurer, W. M. Corne, 106 Morris Ave., Buffalo, N. Y.

American Railway Association—General Secretary, W. F. Allen, 75 Church St., New York City.

American Railway Bridge and Building Association—President, L. D. Hadwen, C. M. & St. P. Ry., Chicago; Secretary, C. A. Lichty, C. & N. W. Ry., Chicago.

American Railway Master Mechanics' Association—President, E. W. Pratt, A. S. M. P. & M., care of C. & N. W. Ry., Chicago, Ill.; Secretary, J. W. Taylor, Karpen Bldg., Chicago.

American Railway Tool Foremen's Association—Secretary, O. D. Kinsey, Illinois Central B. E., Chicago.

American Road Builders' Association—Secretary, E. L. Powers, 150 Nassau St., New York.

Boiler Makers' Supply Men's Association—Secretary, Geo. Slate, The Boiler Maker, 17 Battery Pl., New York City.

Canadian Association of Stationary Engineers—Secretary, W. A. Crockett, Mount Hamilton, Ont., Can.

Canadian Roadmasters' Association—Secretary, J. M. Mackenzie, West Toronto, Can.

Car Foremen's Association of Chicago—President, Chas. J. Wymer, Gen. For. for Belt Ry. of Chicago; Secretary, Aaron Kline, 841 N. Lawler Ave., Chicago.

General Superintendents' Association of Chicago—Secretary, A. M. Hunter, 321 Grand Central Station, Chicago.

International Railroad Master Blacksmiths' Association—Secretary, A. L. Woodworth, C. H. & D. Ry., Lima, O.

International Railway Fuel Association—C. G. Hall, Secretary, 922 McCormick Bldg., Chicago.

International Railway General Foremen's Association—Secretary-Treasurer, Wm. Hall, C. & N. W. Ry., 1126 W. Broadway, Winona, Minn.

International Union of Steam Engineers—President, Matt Comerford; Secretary-Treasurer, James G. Hannahan, 6334 Yale Ave., Chicago.

Master Boiler Makers' Association—President, Andrew Green, Big Four B. E., Indianapolis, Ind.; Secretary, Harry D. Vought, 96 Liberty St., New York City.

Master Car Builders' Association—President, D. R. McBain, S. M. P., care of N. Y. C. B. E., Cleveland, O.; Secretary, J. W. Taylor, Karpen Bldg., Chicago, Ill.

Master Car and Locomotive Painters' Association—Secretary, A. P. Dane, B. & M. R. R., Reading, Mass.

Maintenance of Way Master Painters' Association, United States and Canada—Secretary, F. W. Hager, The Denver Road, Ft. Worth, Texas.

National Association of Stationary Engineers—Secretary, Fred W. Raven, 417 S. Dearborn St., Chicago, Ill.

National Founders' Association—Secretary, J. M. Taylor, Room 342, 29 S. La Salle St., Chicago, Ill.

National Railway Appliances Association—Secretary, Bruce V. Crandall, 14 E. Jackson Blvd., Chicago, Ill.

Railway Equipment Manufacturers' Association—President, Wm. S. Furry, Ohio Injector Co., Monadnock Bldg., Chicago; Secretary, F. N. Bard, Barco Brass & Joint Co., 212 W. Illinois St., Chicago, Ill.

Railway Signal Association—President, Thos. S. Stevens, A. T. & S. F. Ry., Topeka, Kans.; Secretary, C. C. Rosenberg, Bethlehem, Pa.

Railway Storekeepers' Association—President, J. G. Stuart, G. S. K., care of C. B. & Q. B. R., Chicago, Ill.; Secretary, J. P. Murphy, Box C, Collinwood, O.

Railway Supply Manufacturers' Association—Secretary-Treasurer, J. D. Conway, 2138 Oliver Bldg., Pittsburgh, Pa.

Roadmasters' and Maintenance of Way Association—Secretary-Treasurer, L. C. Ryan, C. & N. W. Ry., Sterling, Ill.

Supply Men's Association of American Boiler Manufacturers, Association of United States and Canada—President, J. T. Corbett (J. T. Ryerson & Son), Chicago; Secretary, F. B. Slocum (Continental Iron Works), Brooklyn, N. Y.

Traveling Engineers' Association—Secretary, W. O. Thompson, N. Y. C. Car Shops, East Buffalo, N. Y.

Didn't Want Much.

It was in the far South.

"How's times?" asked the tourist.

"Pretty tolerable, stranger," responded the old fellow, who was sitting idly on the stump of a tree. "I had a pile of brush to burn and the lightning set fire to it and saved me the trouble of burning it up."

"That was good."

"I had some trees to cut down, but the cyclone leveled them and saved me the trouble."

"Remarkable! But what are you doing now?"

"Waiting for an earthquake to come along and shake the potatoes out of the ground."

"Aunt Chloe, do you think you are a Christian?" asked a preacher of an old negro woman who was smoking a pipe.

"Yes, brudder, I 'spects I is."

"Do you believe in the Bible?"

"Yes, brudder."

"Do you know there is a passage in the scriptures that declares that nothing unclean shall inherit the kingdom of heaven?"

"Yes, I'se heard it."

"Well, you smoke, and there is nothing so unclean as the breath of a smoker. So what do you say to that?"

"Well, when I go dere, I 'spects to leave my breff behind me."



No. 106

Economy in High Speed Drilling?

Yes: Providing you use a properly made, uniformly tempered Drill
 "CLEVELAND" Drills can always be depended on

The **CLEVELAND** Twist Drill Co.
 CLEVELAND Chicago

NECESSITIES

High Grade Rubber Goods

Fire Hose

Reels, Nozzles

Fire Hose Carts

Rubber Cement

P. & W. Rubber Preservative

Rubber Boots

Leather-Soled Rubber Boots

Leather Belting

Upholsterer's Leather

Leather and Silk Fringes

Vestibule Diaphragms

Gimp

Brass Nails

Leather Head Nails

Signal Flags

Bunting

Linoleum

Cab Cushions

Cab Curtains

Track Jacks

Economy Soap Stock

Nut Locks

GUILFORD S. WOOD

Great Northern Building,

CHICAGO, ILLINOIS.

BURKE ELECTRIC COMPANY

MAIN OFFICE AND WORKS

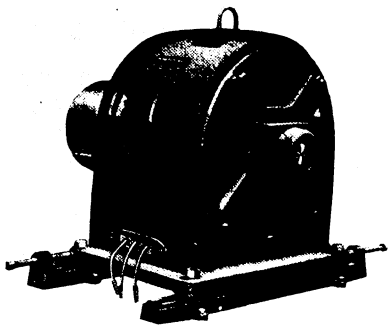
ERIE, PA.

BULLETIN 114

PL. 114

POLYPHASE INDUCTION MOTORS

SIZE: 1/2 TO 100 H.P.



TYPE 124 INDUCTION MOTOR

This Bulletin

is free on your request. You will be better informed on the construction as well as operation of induction motors if you get it and read it.

**BURKE
ELECTRIC
COMPANY**

**ERIE,
PA.**

BURKE ELECTRIC CO. Erie, Pa.
 Please Send Bulletin 114-C

Name
 Address

IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances and Motor Truck
By THE IDEAL POWER PUBLISHING COMPANY

Fisher Building, Chicago

VOL. XI

JANUARY, 1916

No. 11

Class N-SO "Chicago Pneumatic" Fuel Oil Driven Compressors

To produce air compressors with lower operating costs and of lower first cost than any previously known—machines well suited to rough heavy duty under all sorts of abnormal conditions, but with all the operating qualities of economy and simplicity necessary to high grade stationary performance—has been the ideal of the engineers of the Chicago Pneumatic Tool Company, Chicago, in the development of their class N-SO Fuel Oil Driven Compressors.

The importance of these "Chicago Pneumatic" N-SO compressors lies in the fact that they supply a demand not met by any other machines. This is attributable to the fact that they operate on the lowest grades of fuel distillates.

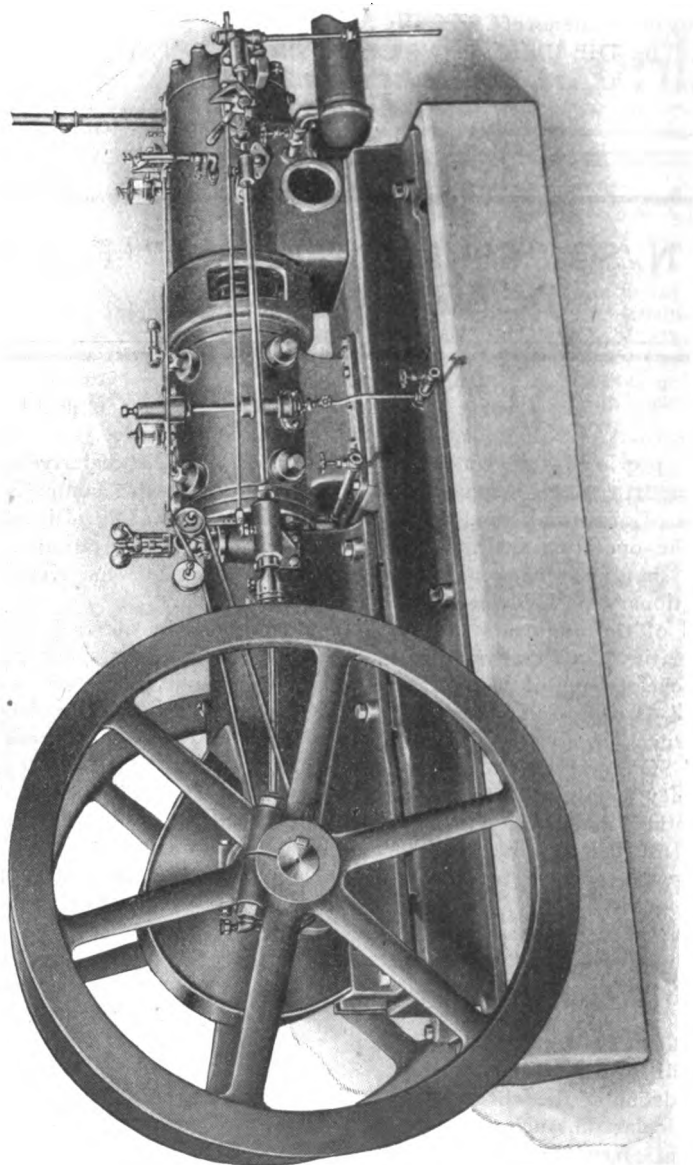
The compressors are guaranteed to run on any mineral oil of 28° Beaumé scale or lighter containing not over one per cent sulphur. There are a number of oils well below 28° Beaumé scale on which they will operate satisfactorily, but this depends upon the characteristics of the particular oil, such as its asphaltum content, freedom from sand, etc., so that a general guarantee cannot be given, though recommendations for heavy oils can and will be made.

Most of the common crude oils, fuel

oils and residuums are naturally included in the above guarantee. A few of the well-known oils particularly suited to the operation of the compressors are as follows: Star Oil, Diesol, Calol, Stove Oil, Gas Oil, Kerosene, and all of the distillates between Kerosene and Lubricating Oil.

A number of the above fuels are obtainable for three cents per gallon, so that N-SO compressors are warranted to compress air to 100 pounds pressure at a cost not exceeding 56 cents per day of nine hours for each 100 cubic feet per minute of free air delivered to the receiver. These figures are so astonishingly low as to seem almost incredible. The facts, however, show that there are dozens of these machines in service with daily records of fuel consumption that bring their costs of operation well under the amount stated. The immediate effect of these performances has been to create a heavy demand for the N-SO's, and it seems certain that they will open up entirely new fields for the application of compressed air.

Class N-SO Compressors are of the horizontal, straight line, single stage type with compressing cylinder bolted to the main frames and closely connected in tandem to the power ends.



Class N-SO "Chicago Pneumatic" Fuel Oil Driven Compressor—stationary type.

The propulsive cylinders are of the valveless, two-cycle, low compression design. Ignition is produced by a patented, positive acting hot-plate system, that eliminates all electric apparatus, such as magnetos, timers, mixers, and spark plugs.

Just as in the Diesel engine, combustion takes place at the end of the compression stroke. The importance of this exclusive feature of design is immediately apparent. Air only is compressed in the cylinder of an N-SO, and combustion is so complete by the time the exhaust port is opened that the fuel loss is negligible. The result is attained through the medium of a small oil pump which injects the fuel against the hot plate on the piston as it approaches the end of the compression stroke. Increased economy is obtained by the use of water with the fuel oil. The quantity of both oil and water admitted to the combustion chamber is controlled by a fly-ball governor.

The outstanding features of the compressing cylinders are, of course, the patented "Chicago Pneumatic Simplate" flat disc air inlet and discharge valves. These are the valves which have been credited with making possible the highest compressor speeds and efficiencies known. They are the only valves obtainable in American made compressors of concentric plate construction. They are guaranteed for three years, and the Company's records show that with 20,000 valves in constant use there has not been a serious complaint to adjust or cause indicated for any appreciable modification in design.

N-SO Compressors are made in both single and duplex machines. Single compressors come in six standard strokes, 8, 10, 12, 14, 18 and 21 inches. The smaller sizes may be tank mounted, and the larger types set on skids so that their use is not confined to stationary requirements.

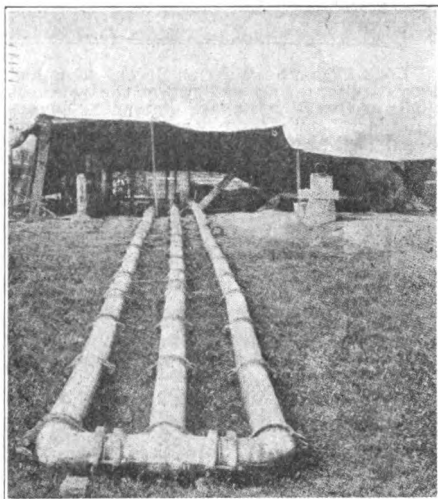
The adaptability of these machines to severe service conditions renders them particularly attractive to mines and con-

tractors, but they are equally desirable for railroad and industrial shops, for pumping oil and water by various systems, and for use wherever cheap compressed air can be utilized.

The manufacturers issue a bulletin describing these compressors which they will be pleased to supply upon request.

Using Compressed Air to Clean Sand Out of Driven Wells at Detroit.

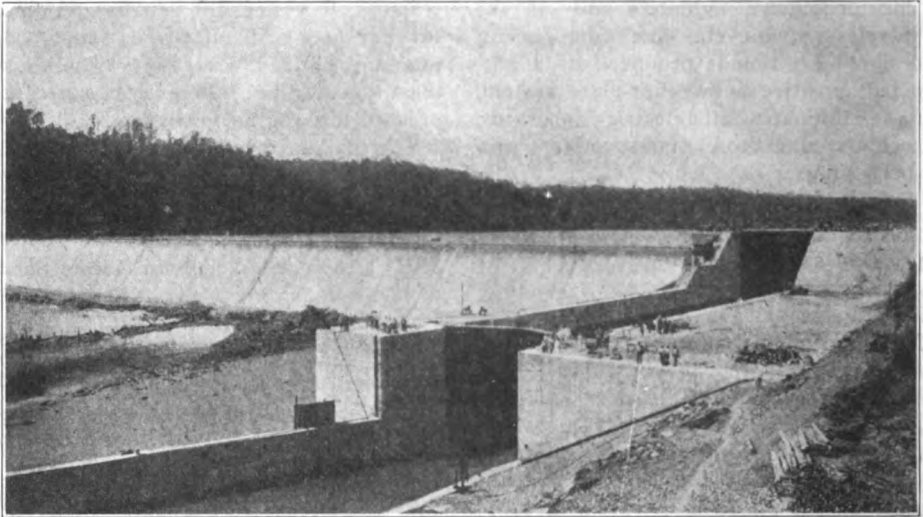
Real estate operators, on the outskirts of Detroit, Mich, frequently install water works systems to supply new subdivisions. The water supply is easily secured from driven wells sunk to the



View of Air Compressor Plant Used in Freeing Driven Wells of Sand at Detroit, Showing Improved Air Reservoir.
Compressor Used was a 7x10 Class H. S. G. "Chicago Pneumatic" Gasoline Driven.

water-bearing sands which underlie practically the entire southern peninsula of the State. Such a system was recently installed in Mr. B. E. Taylor's Strathmore Subdivision of Detroit. The system was designed by Patrick W. Keating, Consulting Engineer, and installed by W. L. Dillon, 1503 Kresge Bldg., Detroit.

The supply in this case was derived from three 8-in. wells having an average



Lock 17 on the Warrior River. This lock has a 65-foot lift and forms a lake over 60 miles long, giving 6-foot navigation the year round from the Gulf at Mobile to the coal and iron fields of the Birmingham district. "Giant" Fuel Oil Engine operates it.

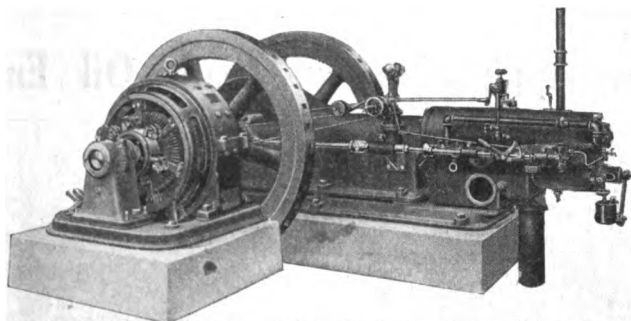
depth of about 220 ft. The wells are cased to the full depth and are provided with Cook well screens at the bottom. Two of the wells were placed in service shortly after their completion and considerable trouble was experienced from the presence of sand. The third well was drilled in January, 1915, and a pumping test developed a flow from this well of 300 gals. per minute. It was not put in service until July, 1915, and at that time the lower 15 ft. of the well was completely filled with packed sand. So much trouble had been experienced from sand in the wells under operation and, it being impossible to utilize the third well on account of the large amount of sand it contained, it was decided to rig up a compressed air plant with which to remove the sand from all the wells.

A view of the air compressing plant is shown herewith. The compressor was of Chicago Pneumatic Tool Co. manufacture. As no air receiver was at hand one was improvised, as shown in the view, from 216 ft. of 6-in. Universal cast iron pipe. An average air pressure of 150 lbs. to the square inch was maintained. The third well, which

had stood idle for six months, was the hardest to clean and as the methods employed in cleaning it were used on all the wells they are here described.

A 2-in. wrought iron pipe was taken off the improvised air receiver and extended, through a bushing in the well casing, down to the middle of the sand in the well, where it terminated in a 1-in. nozzle. Air was then admitted to the sand under 150 lbs. pressure and water and sand were forced out of the upper end of the well casing, which was left open. This method was continued as long as it did any good and a considerable portion of the sand was removed in this manner. A Fairbank-Morse electrically driven plunger pump was then attached to the upper end of the casing and placed in operation while air was again forced into the casing below this suction connection. This was continued until the well was free of sand. On this well two days were required to remove all the sand and in making the plant changes mentioned.

For this information we are indebted to Mr. W. E. Holland of the Chicago office of the Central Foundry Co. of New York City.—*From Engineering and Contracting.*



"Giant" Fuel Oil Engine direct connected to D.C. Generator. Installation referred to subjoined article is of this type.

On opposite page is shown Lock No. 17, Warrior River, near Tuscaloosa, Ala., which was opened for navigation in May, 1915. The lock gates are operated by electricity and as the vast water available has not as yet been utilized for generating electricity it was necessary to put in a generating set to supply the needed energy to operate the lock gates and for lighting service.

The U. S. Government officials, after exhaustive investigation, decided that the Type A-O Giant Oil Engine, made by the Chicago Pneumatic Tool Company, was the best and most efficient engine for this purpose and placed order for a 45 h.p. Oil Engine and generator direct connected, with generator mounted on engine shaft. This is installed in the small shed shown on inner wall of the lock near the top, or crest of the dam. This order was given in January, 1915, and the plant was installed a few months later, since when it has been in continuous operation as required, day and night, with very satisfactory results.

The work in building the dam shown, together with other locks and dams in the Warrior River was under the direct supervision of Asst. United States Engineer, G. K. Little, stationed at Tuscaloosa, Ala., and to him and his able corps of assistants should be given the full credit for the successful completion of this work.

The excavating for and building of the dam was done by the Hardaway

Contracting Company of Columbus, Ga., the steel lock gates and machinery were designed and planned by Capt. Little's force and the gates made complete and installed by the government shop force at Tuscaloosa. These gates are a perfect fit when closed, allowing no water to leak through, in fact a man can walk across the lock aprons without getting his shoes wet, and figuring on the vast pressure exerted by the wall of water back of these gates, shows the efficiency of the government corps in designing, fabricating and erecting same.

The opening of the Warrior River to navigation is of vast importance to Northern Alabama and especially to the ore and coal fields of the Birmingham district, and immediately was put into use by some of the larger corporations as the record of over one hundred vessels and barges passing through this lock in the first month will attest, and the traffic and tonnage is increasing constantly, only being held back by the lack of barges at the present time.

Otherwise Not.

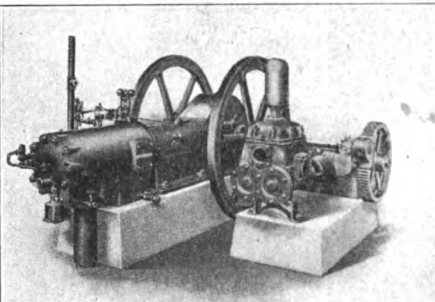
"Why do you want to get divorced?"
"Because I'm married."

Wild-Eyed Customer—"I want a quarter's worth of carbolic acid."

Clerk—"This is a hardware store. But we have—er—a fine line of ropes, revolvers, and razors."

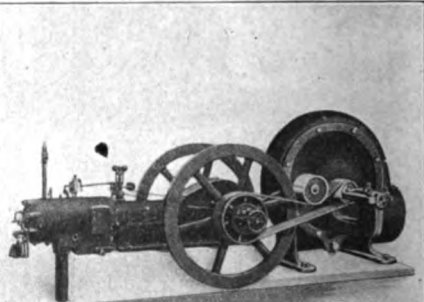
*"Boyer"**"Chicago"*

A Few Applications of Giant Oil Engines



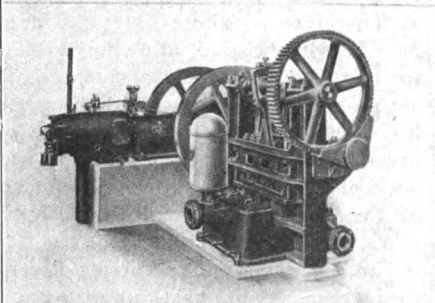
Giant Oil Engine Driving Gardner Pump

We furnish complete installations



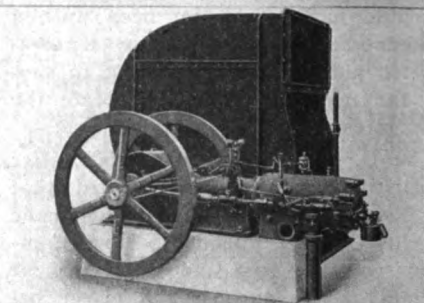
Giant Oil Engine Operating Volume Exhauster

An ideal short belt drive outfit



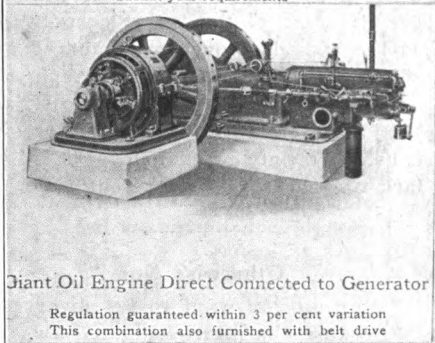
Giant Oil Engine Operating Goulds Triplex Pump

Submit your requirements



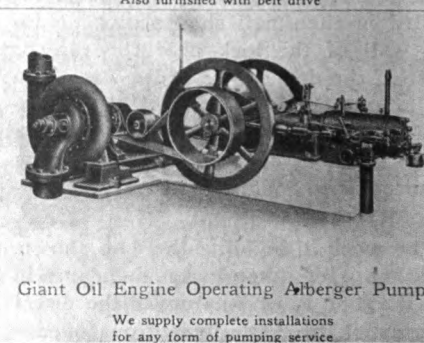
Giant Oil Engine Operating Planoidal Fan

Also furnished with belt drive



Giant Oil Engine Direct Connected to Generator

Regulation guaranteed within 3 per cent variation
This combination also furnished with belt drive



Giant Oil Engine Operating Alberger Pump

We supply complete installations
for any form of pumping service

ASK FOR QUOTATIONS

Chicago Pneumatic Tool Co.

1014 Fisher Bldg., Chicago

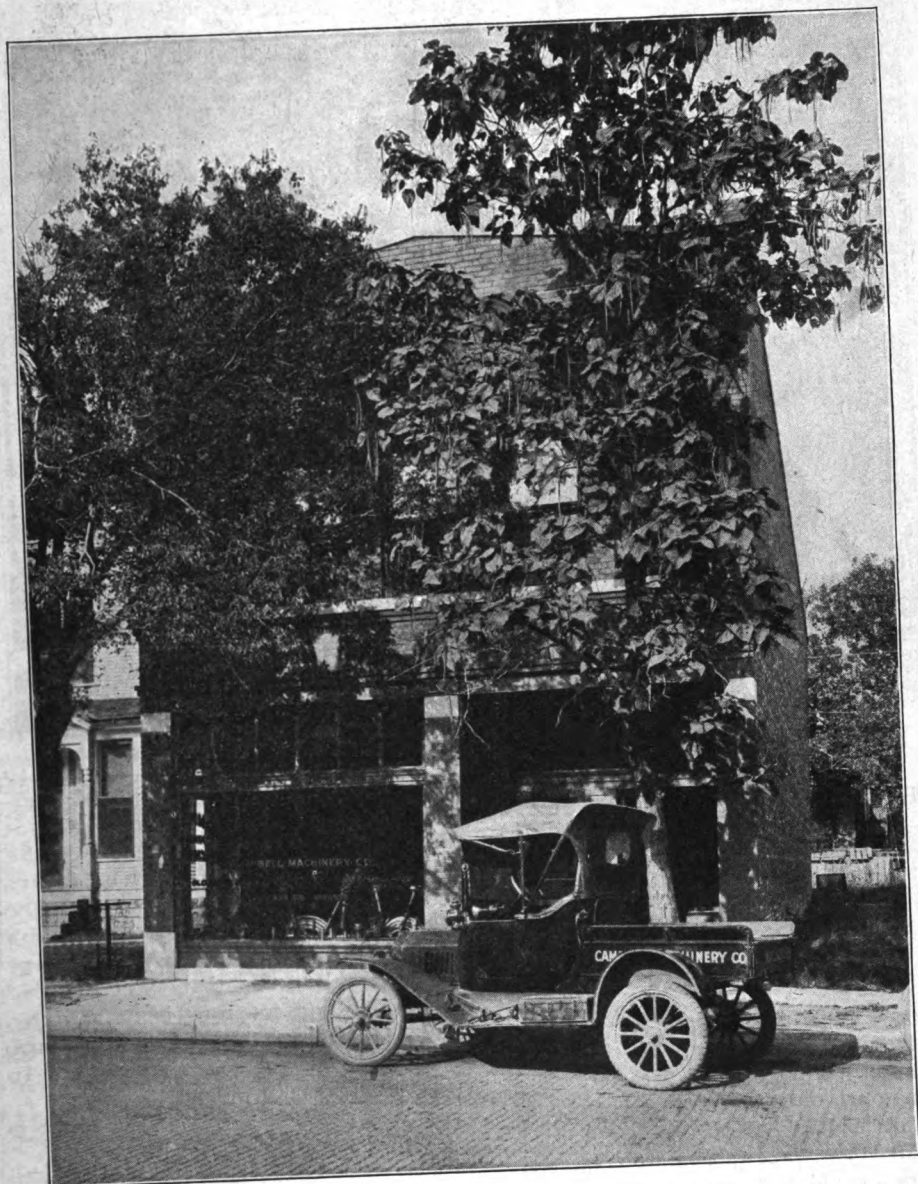
Branches
Everywhere

52 Vanderbilt Ave., New York

*"Duntley"**"Little Giant"*

When writing to advertisers please mention Ideal Power.

Digitized by Google



"The above is a photograph of the Campbell Machinery Company's place of business at Joplin, Missouri. This enterprising firm was organized last June and started in business July 1st. They are the sole representatives of the Chicago Pneumatic Tool Company in the Joplin district. Mr. J. B. Corby is president of the new company, and Mr. J. E. Campbell is treasurer and general manager. Mr. Corby is also president and treasurer of the Corby Supply Company, who has represented the Chicago Pneumatic Tool Company in the southwest with headquarters in St. Louis for the past fifteen years. Mr. Campbell has a wide acquaintance among the machinery interests in the Joplin territory, where he has been selling compressed air machinery and rock drills, and is thoroughly acquainted with the conditions and has a wide acquaintance among the mine operators, and their patrons can be assured of the best of service and courteous attention, and they will be ready at all times to give them the benefit of their wide experience."



THE CITY W. C. K. BUILT.

The Work of Westinghouse Church Kerr & Co., Engineers and Constructors.

The buildings shown in this photograph were designed and constructed in their entirety by W. C. K.

This W. C. K. city cost \$50,000,000. That's equal to the total assessed valuation of improvements in the city of Dayton, Ohio, or Worcester, Mass. There are only 33 cities as large in the whole United States.

All the wage-earners of Hartford, Conn., could find employment here.

Over fifty-six million square feet is under roof.

The building materials and equipment made over 1,000,000 tons of freight. (W. C. K. can buy to advantage.)

To haul all this at once would require a solid train 590 miles long. (W. C. K. have an experienced traffic department.)

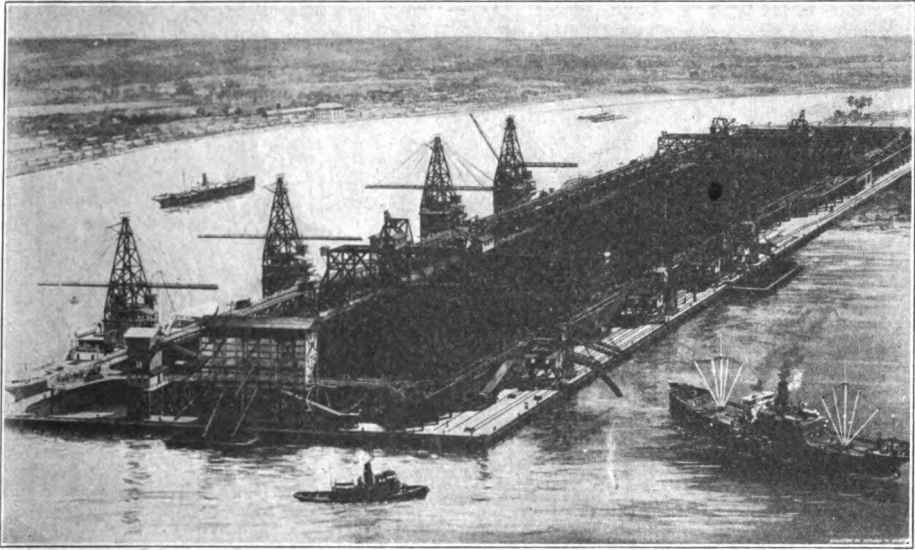
This W. C. K. city is a big city to be the work of a single firm of engineers and constructors. But, big as it is, it by no means represents all the work of W. C. K. Millions of dollars of work does not appear in this picture where W. C. K. did only a part of the work—not the whole. No building appears in this group that W. C. K. did not design and construct in its entirety.

W. C. K. have had some experience that ought to be of service to you in your particular problems.

**WESTINGHOUSE CHURCH KERR
& CO.**

Our interest in the above lies in the fact that Boyer Long Stroke Riveting Hammers and Little Giant Air Drills were important factors in the erection of these buildings—and we congratulate W. C. K. Co. on the wonderful showing they have made.

CHICAGO PNEUMATIC TOOL CO.



New Cristobal Coaling Station at the Panama Canal on which Boyer Hammers and Little Giant Drills were used exclusively.

The New Cristobal Coaling Station at the Panama Canal.

The Cristobal Coaling Station of the Panama Canal is rapidly nearing completion. It is located on Mina Island with the old French Canal on one side and the Panama Canal proper on the other. The four towers shown on the left of the photograph are traveling unloading towers and have a capacity of 250 tons each per hour, making a total unloading capacity of 1,000 tons per hour. The three towers shown at the right of the photo are re-coaling towers, each having a capacity of 250 tons per hour. At the outer end of the pier or station there is a submerged pit having a storage capacity of 50,000 tons of coal which is for the exclusive use of the U. S. Navy. This coaling station is about 1,400 feet long by 300 feet wide, and about 14,000 tons of steel have been used in its construction. The steel work was fabricated and the erection work was done by the American Bridge Company, and Boyer Hammers and Little Giant Drills were used exclusively.

The Wagging Tongue.

The wagging tongue is the oldest and greatest advertising medium in the whole world.

In this country it has a circulation of 100,000,000.

It cannot be bribed.

Unlimited cash cannot buy it.

Service is the only coin by which it can be bought.

Courtesy will secure its eternal good will.

Its active support can be bought with fairness.

Business integrity will purchase its boundless influence.

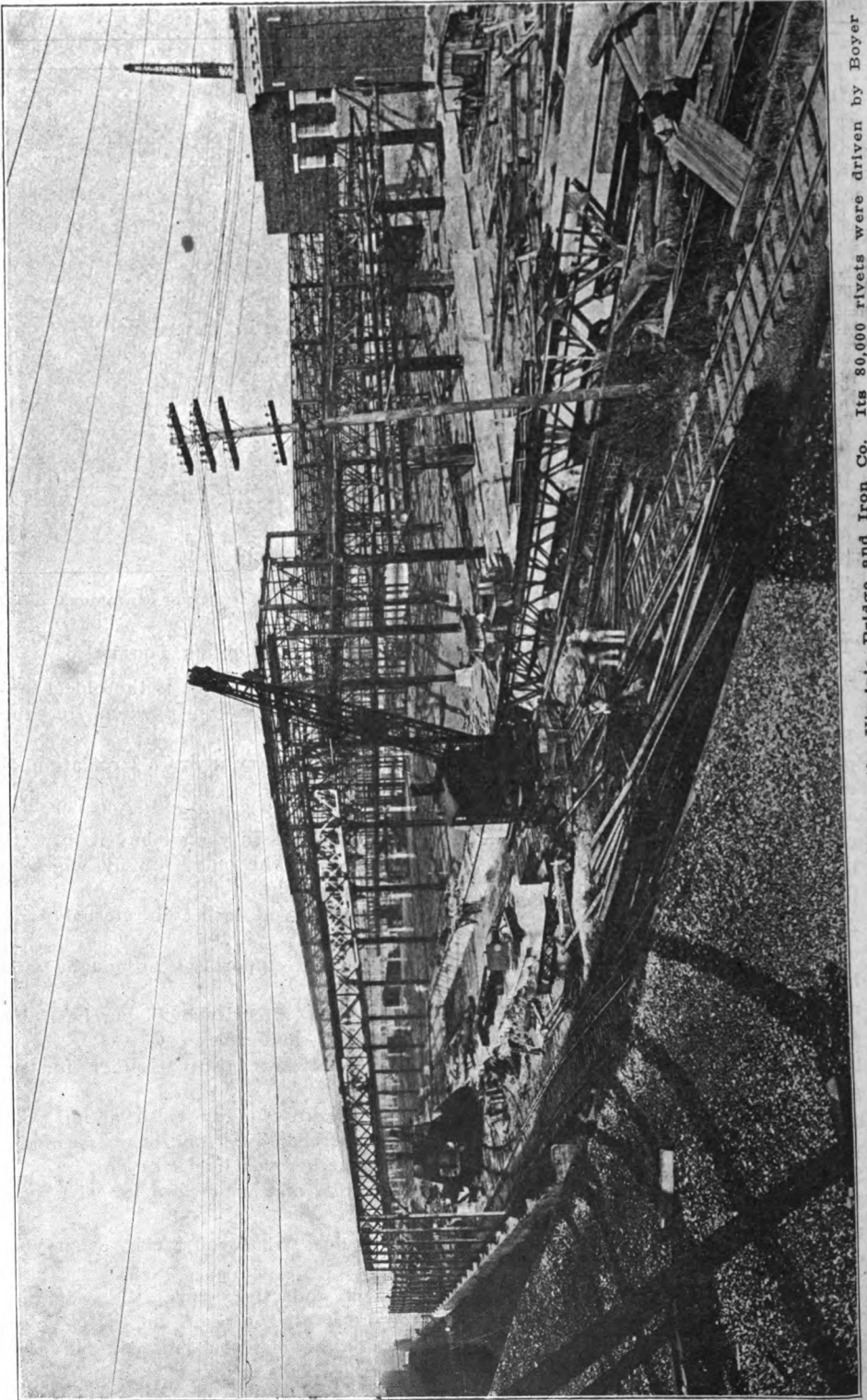
It is always positive—either for or against.

It speaks out the truth about you, your merchandise, your business methods, whether you like it or not.

It won't take your word for what you are.

It judges what you are by what you do.

In a collective sense, the wagging tongue is always right, and if its voice is raised against you, it is generally deserved.—Exchange.



... Savannah Terminal at Savannah, Ga., erected by the Virginia Bridge and Iron Co. Its 80,000 rivets were driven by Boyer

New Terminal at Savannah.

On the opposite page is a progress view of the Ocean Steamship Company's New Terminals at Savannah, Ga. This photograph was taken Sept. 13th, 1915, and shows practically all of the north pier sheds in place. These terminals are being erected by the Virginia Bridge & Iron Co. of Roanoke, Va. About 3,500 tons of steel is required for the job and 80,000 rivets which are being driven exclusively by Boyer Hammers.

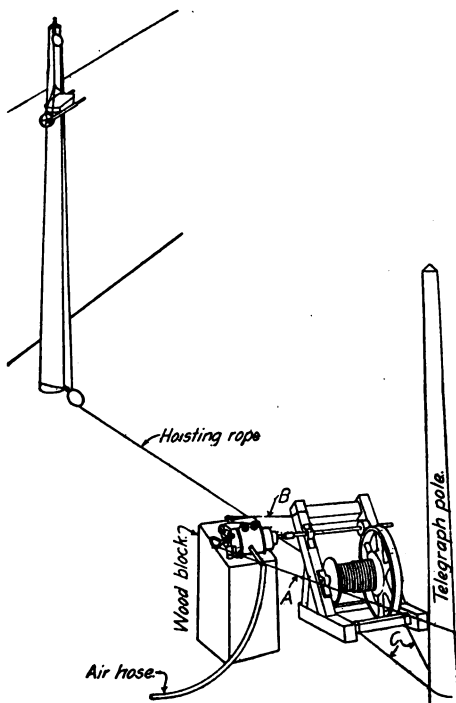
The steel work for these terminals is fabricated and erected by the Virginia Bridge & Iron Co., and to date about 3/5 of the steel is in place. The general design provides for a slip 1,020 feet by 225 feet, with pier sheds and warehouses about 215 feet wide, extending both sides and around the land end.

Using a Pneumatic Drill Motor as a Hoisting Engine.

By V. T. Kropidlowski.

Chicago & North Western, Winona, Minn.

It is surprising to note the many uses to which an air motor may be adapted. Only a short time ago a bridge and building gang was engaged in renewing a gravel roof on a machine shop. Gravel was being hoisted to the roof by the wheelbarrow-full by three men working with a windlass. The idea occurred to someone to replace the three men at the windlass with a motor secured from the shops. As this motor requires but one man to operate it, the two men were relieved for other work while three wheelbarrows of gravel were handled in this way to one by the men. The motor was attached as shown in the accompanying sketch. The windlass was anchored to a nearby telegraph pole by two ropes "C," as shown in the sketch. The motor was placed on a wooden block to bring it to a height so that its socket was on a level with the crank



A novel application of "Little Giant" Drill Motor.

shaft of the windlass. The motor was then anchored to the block with a light chain, and to keep it from moving it was further held in place by wires "A" and "B." While it was necessary to fit a square socket to the crank shaft, this required very little work, as a Morse taper with a square socket was secured from the shop and this was made to fit by filing the square of the crank shaft slightly. At first a No. 2 Little Giant motor was tried, but this was found too small and a No. 0 motor was substituted. This latter motor was able to hoist a heaped wheelbarrow of gravel without any difficulty.—*Railway Age Gazette*.

"Charles," said the teacher, "do you know what the word 'celerity' means?"
 "Yes'm," said Charles. "It's something you put hot plates down with."

Hummer Drills at Work



La Mura Contracting Co., cutting a sewer through rock in 215th St., Bronx, New York, with the aid of "Hummer" Hammer Drills. Those familiar with that locality will recognize Spuyten Duyvil Creek and the upper end of Manhattan Island, with the Hudson and its Palisades in the distance.

More Hummers at Work



This view shows a battery of "Hummer" Hammer Drills in operation cutting a street through solid rock at 149th St. and Eagle Ave., Bronx, New York, under the direction of Fred. Schneider, contractor. "Hummer" Hammer Drills are doing their share in the transformation of New York's waste places into habitable localities.

IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air
and Electrical Appliances

BY THE

IDEAL POWER PUBLISHING CO.
1014 FISHER BUILDING
CHICAGO, U. S. A.

C. I. HENRIKSON

Editor

Vol. XI JANUARY, 1916

No. 11

TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year
Other Countries in Postal Union, 50 cents per year

ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our
subscription list.

Little Giant Has New Home.

"Due to the general revival of business, all our plants," says W. O. Duntley, President of the Chicago Pneumatic Tool Company, "are working at full capacity and several of them have put on full night shifts. The plant at Chicago Heights, where we build the Little Giant trucks, has work up to its capacity for months to come and at the rate orders are coming in, larger manufacturing facilities will have to be obtained."

On January 1st, the motor truck department of the Chicago Pneumatic Tool Company pulled up stakes at 1470 Michigan Ave., and 2427 Calumet Ave., and moved into its own building at 1615 Michigan Ave. The new home of the Little Giant truck, known as the Little Giant Building, is three stories high with a floor space aggregating 15,000 square feet, all of which will be devoted to the activities of the Little Giant Truck.

The showrooms are located on the first floor. The executive and administrative departments occupy the second floor, while the top floor is given over to the service and repair departments. With all branches of the truck department under one roof, greater efficiency in handling the local business will result, and Mr. T. J. Hudson, Jr., who manages the truck department, is highly pleased at the change.

The outlook for the Little Giant is brighter than ever. The year opened

with unfilled orders for hundreds of trucks, and the demand this year has been brisk.

Chief interest is centered on the new line of worm drive Little Giants which are built in two sizes, $\frac{3}{4}$ -1 ton and 2 ton capacities. In offering this new line, full advantage is being taken of the prestige given it by the adoption of standardized units which enter into the construction.

While the Worm Drive occupies the center of the Little Giant stage at the present time, the original chain drive, Model "H," in one ton and one and a half ton sizes is in great demand and there are many unfilled orders on the books at the present time. In the Model "H" the engine is located under the seat, making an extremely short wheel base possible, a feature on which many buyers insist.

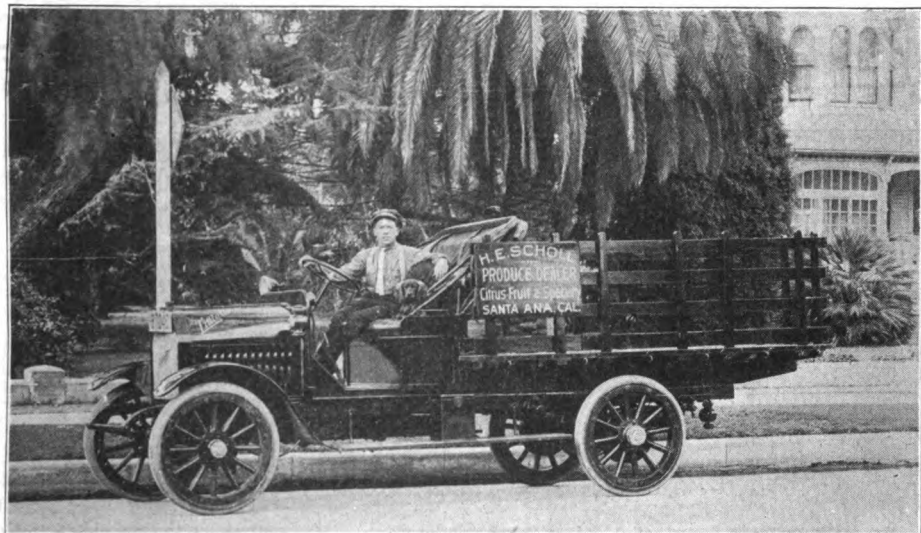
The company is also pushing and marketing its Six Wheel Truck. Foreign orders for these have been given preference during the past year and the future of the six wheel truck—although a radical innovation in truck practice and design—is bright in the extreme.

Situations Wanted.

First-class tool repair man. Has had four years' experience with large locomotive works. Now in New York, but will go anywhere. Address Ad. 14, Ideal Power.

Married man, 25 years old, has had considerable experience in Hydro plant work, arc lamps, etc. Graduate of I. C. Schools in electric lighting course, wants position in Central Station or Sub-station work as operator. Can furnish first-class references. At present employed. Address Ad. 15, Ideal Power.

A position as foreman in structural iron shop. Have had 15 years' experience in shop management. Can handle men and produce results. Is 35 years of age and married. Address Ad. 16, Ideal Power.



Three-quarter Worm Drive Little Giant Truck, owned and operated by H. E. Scholl, Santa Ana, Cal.

The Little Giant as an Aid to Prosperity.

"One of the ways, often overlooked, in which society is benefited by Motor Truck Transportation is the increased value it gives to farm land located many miles from market. There are many pieces of land, located 20 to 50 miles distant from prosperous cities, which are admirably suited to produce and small fruit raising but which are lying idle because of their inaccessibility to market by means of horse and wagon. A motor truck will put such farms within easy reaching distance of the market and thus increase many times, the value of the land.

Mr. H. E. Scholl was cultivating a farm about 35 miles from Santa Ana, Cal., his nearest market and obtaining a bare livelihood. Four years ago he purchased a Little Giant truck, which enabled him to easily reach Santa Ana with his goods. Since he has been very successful and has purchased two additional Little Giant trucks, his latest being the new Model 15, $\frac{3}{4}$ -ton worm drive Little Giant. His success has been entirely due to his Little Giant

trucks as he could not get to market with his goods if he used a horse and wagon."

Hay Burners for Motive Power.

During the Civil War, according to profane history, a remarkable railway was in operation between Shreveport, La., and Marshall, Tex. The line bore the somewhat ambitious title of the Memphis, El Paso & Pacific. Its rolling stock consisted of three box cars and its motive power was gravity and oxen. The cars were loaded at Marshall, and a yoke of oxen put in the front car. The train then coasted down the long grade from Marshall. At the bottom of the incline the oxen were taken out and set to work hauling the train over the next summit. They then got aboard again and the train rolled merrily down the next grade. The performance was repeated until Shreveport was reached.

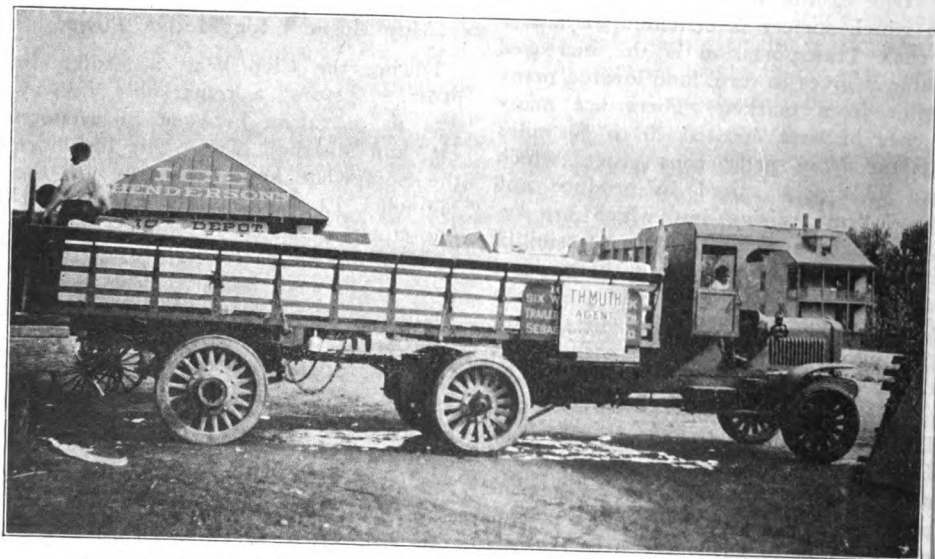
Doctor—"I have to report, sir; that you are the father of triplets."

Politician—"Impossible! I'll demand a recount."—Puck.

Some Remarkable Performances of Six-Wheel Little Giants



Four-Ton General Motors Truck, equipped with Little Giant Six-Wheel body, hauling one box car load—165 bales—of hay.



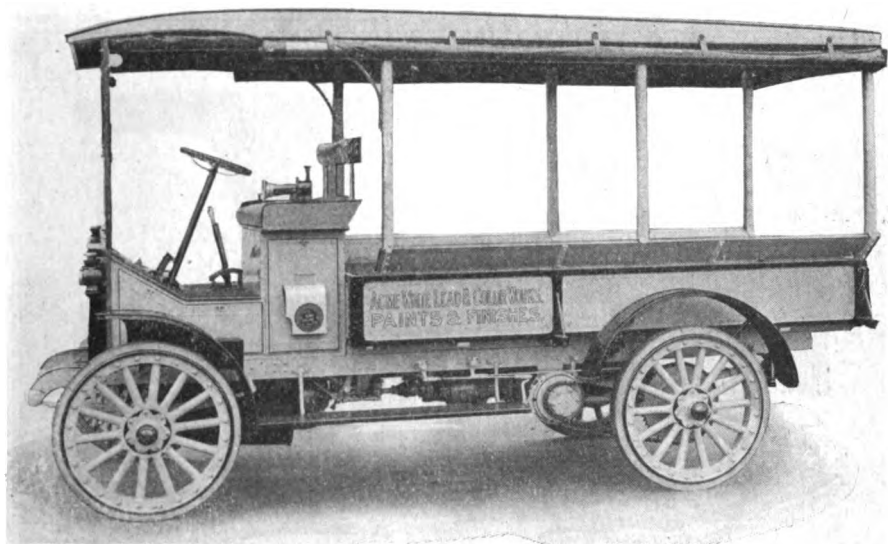
A Four-Ton General Motors Truck, equipped with Little Giant Six-Wheel Chassis, hauling eleven tons of ice.

WRITE FOR DETAILS AND PRICES

Chicago Pneumatic Tool Company, 1615 Michigan Ave., Chicago

When writing to advertisers please mention Ideal Power.

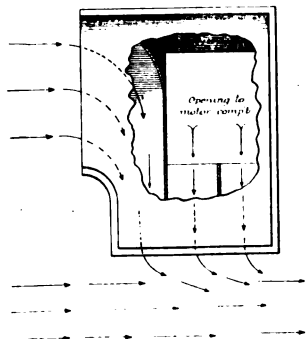
Digitized by Google



A Model H Little Giant Truck installed by the Acme White Lead & Color Works. The Garland Exhaust Ventilator, with which all Model H Little Giants are equipped, is shown on side panel just below the seat.

The Garland Ventilator.

Little Giant Model "H" Trucks are equipped with the Garland Ventilator. The exhaust action of this ventilator is produced by two air currents striking at right angles at a point in front of the opening to the motor compartment, causing a vacuum, into which the heated air is drawn, to the outside. While this device is most efficient when the vehicle is in motion, it is also efficient when standing still, in preventing the pocketing of heated air in the upper part of the motor compartment. It exhausts the heated air which pockets



Showing how air currents produce the desired effects in the Garland Exhaust Ventilator.

above the engine and which is not removed by fan or fly wheel action. This superheated air, as is well known, prevents cylinder walls from cooling and the radiator from giving full efficiency.

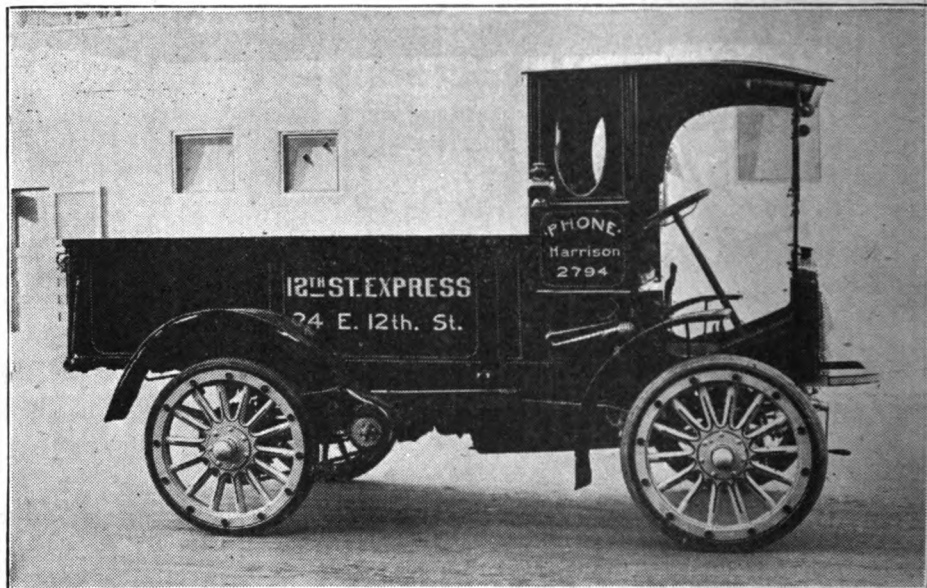
Garland Exhaust Ventilators are simple in construction; no parts to get out of order, are absolutely storm proof, and can be applied to any type of motor car at a nominal cost. They were selected for the Little Giant after thorough tests had satisfied the Tool Company that the efficiency of the engine was increased by their use.

The Garland Exhaust Ventilator is manufactured and sold by the Ross-Wortham Company, 1818 McCormick Building, Chicago.

"Will you have anything on your face, sir, when I am through?" asked the barber.

"You might leave my nose there," answered the man in the chair.

Except for the headache a man has the morning after he probably wouldn't remember the good time he had the night before.



No service is quite as severe on a motor truck as express service. This Model H "Little Giant" is making good.

A Testimonial With a Punch.

Referring to your favor of recent date making inquiry as to whether the two "Little Giant" trucks were still in our service and whether there is anything you can do for us.

We are mighty glad to have an opportunity to say a few good words in connection with your product and hope it will be of benefit to your patrons and prospective buyers.

As you are aware, we purchased the two trucks over a year ago and they have been given the "acid test," and we really believe no other two trucks of their capacity could be more dependable, and we keep them going at a merry clip every day.

We also want to say that we very much appreciate the courtesies extended by your Cleveland people, particularly Mr. H. B. Young, Manager, and his very able assistant, Mr. Fred Sweet, with whom we placed our order for the trucks.

Permit us to call your attention to the cut of the "Little Giant" in the upper right hand corner of our letterhead.

With the hope of adding more "Giants" to our force in due time, and extending our best wishes, we beg to remain,

Yours very truly,

THE ADVANCE CARTAGE CO.,

(Signed) E. J. SMITH,
P. & G. M.

AUTO OUSTS LAST HORSE.

Mandel Brothers Part With Pardy,
Who Goes to Equine Elysium.

All That Remains as Memento Is
Gilded Shoe Nailed to Wall.

It was like a mercantile edition of "Black Beauty"—the parting scene between the veteran barn boss and old Pardy, last of the 297 faithful horses which formerly drew wagons for one of Chicago's department stores, says the Chicago Daily News.

Pardy went away today to that equine paradise, a farmer's pasture land. And Superintendent L. L. Timmons, a horse lover and Kentucky bred, finds himself in charge of eighty delivery motor cars. They never whinny for sugar or show affection, but do the work of 450 horses and deliver an average of 12,000 packages a day over a radius of more than thirty miles from the loop. All that remains to remind him of the good old—



The above view shows another Little Giant truck in the express service, owned by the Lakewood Auto Express Co. This was sold them by Mr. H. B. Young of the Cleveland Office of the Chicago Pneumatic Tool Co. This truck has a peculiar type of body known as the "wheel-house" type—that is the fender fits up inside the body proper thus giving an exceptionally large body space, five feet wide inside and yet is down very low on the frame.

not so efficient—old days, is a gilded horseshoe nailed to his office wall.

Sell Last Delivery Horse.

Announcement that Mandel Bros. had sold their last delivery horse was hailed by automobile men and delivery experts as the marking of an important chapter in transportation progress. Other department stores are displaying similar activity in ousting horses and adopting most up-to-date methods of package distribution.

"The complete motor service means that we are able to extend our radius of direct delivery service from the loop by many miles," said General Manager D. F. Kelly.

"We are now sending packages right over the roads to customers in Waukegan and cover equal distances to other points. When our horse delivery service was at its crest we used 297 animals, but were forced to relay much of our goods by train express to the suburbs, where wagons from branch stables completed the deliveries. Now practi-

cally everything within more than thirty miles of the store can be sent direct from the loop.

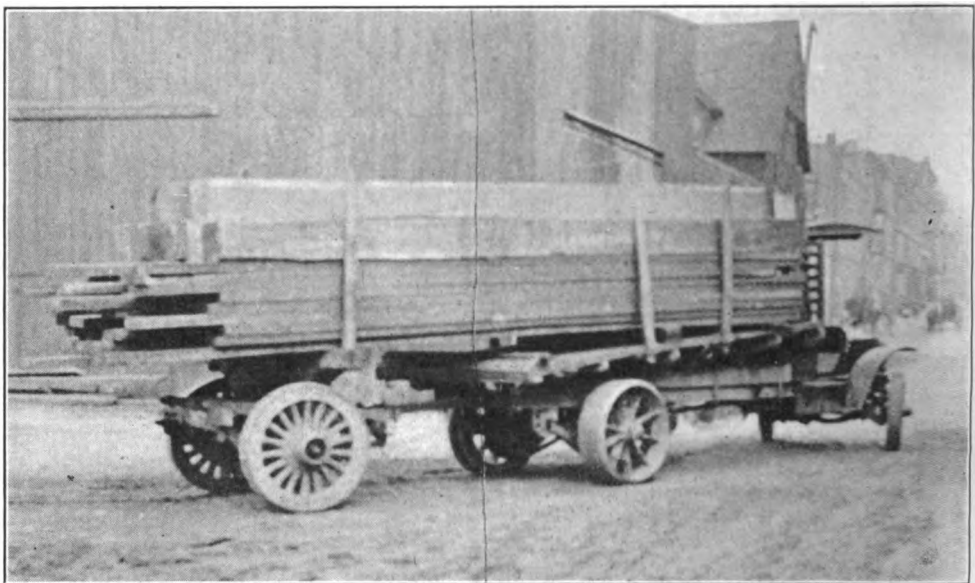
Sentiment Once an Element.

"Of course, there was an element of sentiment in the day of horses which cannot be duplicated in this era of machinery and gasoline. But motor cars give such service that no argument stands against them. One day just before Christmas, for instance, our cars delivered 24,000 packages."

Horse Must Vanish, View.

"The complete passing of the horse in retail delivery service is inevitable," observed General Manager E. M. Rosenthal of Rothschild & Co. "We are constantly strengthening our delivery system with motor cars, to the public's satisfaction."

Other heads of stores, large and small, within the loop and in other business centers, reported remarkably rapid progress in the invasion of the motor car in the delivery field.



Six Wheel Truck in Service of Yellow Pine Company, Brooklyn, N. Y.

The Yellow Pine Company of Brooklyn, N. Y., have a fleet of six wheel trucks consisting of five ten ton and one seven ton capacity. They state that the cost of delivery of Yellow Pine lumber with these trucks has been 87 cents per thousand feet, as against \$2.28 per thousand feet with horse-drawn vehicles, and \$2.68 per thousand feet with motor trucks before adopting our six-wheel system. The average length of lumber carried was 26 ft., and they have carried 12x12 in. needles 68 ft. in length through the heaviest traffic in New York City.

Remember the Words, "YOUR BEST."

"An old man was leading two calves out to early pasture. When he came to the field he tied one calf to one of his boot-straps and the other to the opposite strap while he opened the rickety gate. The calves ran away. When he was picked up, his wife asked him: 'Didn't you know any better than to do such a foolish trick as that?' 'Yes, Ann,' he answered, 'I hadn't been dragged four rods before I saw my mistake.'"

An Inspiring Model.

"Little Johnnie owned a couple of bantam hens which laid very small eggs, this fact being displeasing to the youngster. Going to the fowl-run one morning, Johnnie's father was surprised to find a goose egg tied to one of the beams and above it a card with the words: 'Keep your eye on this and do your best.'"

Wanted to Know.

An Irishman having just landed in New York got a position on the railroad as flagman at one of the principal crossings. One day came the "20th Century Limited" about 20 minutes late. The Irishman held out his red flag and stopped the express. The engineer jumped off very much angered, and asked the Irishman why he had stopped the train when he knew they were 20 minutes late. The Irishman replied: "That's just what I wanted to know. Where have you fellows been for the last 20 minutes?"

She—"Did you have a fine auto trip?"

He—"I should say so. It was a fine every town we went through."

The Duntley Way

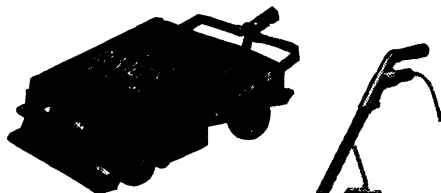
IN

MODERN HOUSEKEEPING

Duntley Vacuum Sweeper

Light and convenient as ordinary carpet sweeper.

Brush and suction combined.



Duntley Electric Sweeper

The all-around electric sweeper for daily use.

Low clearance—only five inches high.

Twelve-inch adjustable nozzle with self-adjusting brush.



Duntley Twin Pump Electric Cleaner

The most powerful and efficient vacuum cleaner made.

Weights only 35 pounds; only 21 inches high; easily carried; noiseless; vibrationless.



All Duntley Cleaners are Licensed under Kenney Patent

WRITE FOR CIRCULARS AND PRICES

Duntley Products Sales Co.

810 Fisher Bldg., Chicago, Ill.



This illustrates the 2-ton model 16, Little Giant truck fitted with special body for wine casks and case goods, owned by P. M. Nelson, San Francisco, Cal., contractor for the Italian Swiss Colony Wine Association of San Francisco, Cal.

This truck is in service 11 hours per working day, covering approximately 45 to 50 miles, in the most hilly district of San Francisco and averages 12 miles to the gallon. Out going loads will weigh about 4,500 pounds. Incoming loads of empties, about 3,850 pounds. "The Little Giant is cutting a wide swath in San Francisco," says G. E. Phillips, Little Giant agent at that point.

The Reason.

"But, Eliza," said the mistress, "your little boy was christened George Washington. Why do you call him Izaak Walton? Walton, you know, was the famous fisherman."

"Yes'm," answered Eliza, "but dat chile's repetashun fo' tellin' de troof made dat change imper'tive."

Childish Impudence

Teacher (to dull pupil in mathematics)
—You should be ashamed of yourself. Why, at your age George Washington was a surveyor.

Pupil—Yes, sir; at your age he was President of the United States.

Angels Not Wanted

Applicant for Position—I have here a letter of recommendation from my minister.

Head of Firm—That's very good so far as it goes, but we won't need your services on Sundays. Have you any references from anybody who knows you the other six days of the week?"

Jenks—Why do you persist in beating time with your feet?

Jones—It's the music in my sole I guess.

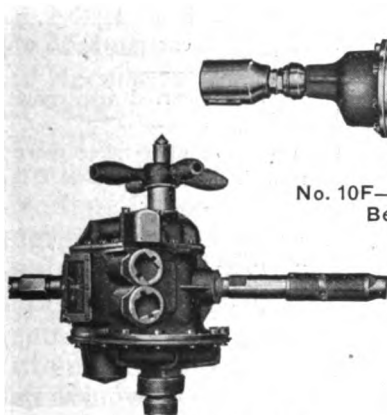
Situation Wanted.

Practical electrician, with long experience in maintaining electric drills and grinders for large company, desires to make a change. Address Ad. 19, Ideal Power.

REMEMBER—while feeding your Air Drill at the feed-screw, you are also feeding it at the throttle.

Due to Their High Efficiency LITTLE GIANT AIR DRILLS

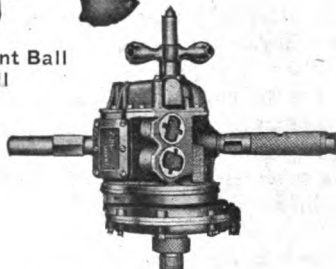
Are particularly adapted to the needs of users of compressed air, the condition of whose air supply makes it imperative that maximum results be obtained from their pneumatic equipment.



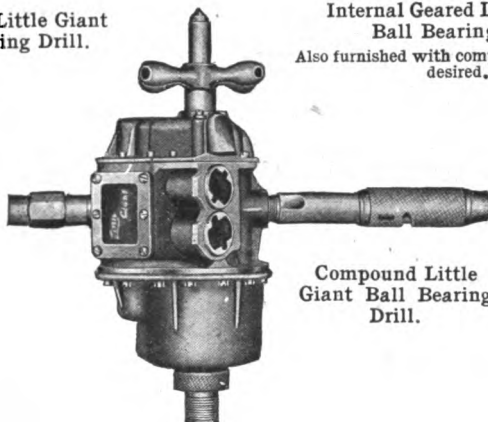
Improved Little Giant
Ball Bearing Drill.



No. 10F—Little Giant Ball
Bearing Drill



Internal Geared Little Giant
Ball Bearing Drill.
Also furnished with compound gearing, if
desired.



Compound Little
Giant Ball Bearing
Drill.

In the wide range of Little Giant Drills you can find a machine for any desired capacity or service, any particular speed and in either the reversible or non-reversible types.

Ask for Bulletin 127

CHICAGO PNEUMATIC TOOL COMPANY

1014 Fisher Building
CHICAGO

BRANCHES EVERYWHERE

52 Vanderbilt Ave.
NEW YORK

When writing to advertisers please mention Ideal Power.



A dental artist makes his drawings from life.

Blessings in disguise generate some profanity.

The owner of a smart dog does most of the howling.

"If" is the most unsatisfactory word in our language.

The sweetness of revenge often sours the disposition.

When it is silks with the wife it is apt to be sulks with the husband.

The world would have more to worry about if each man could make his own weather.

It's the man who makes a fool of himself that seldom boasts of being self-made.

There's more than one way to shuffle off this mortal coil. That's why doctors often disagree.

At the age of 21 a man attributes all his troubles to "cruel fate." At 50 he blames his "cursed luck."

Of course you are entitled to think what you please, but it isn't always safe to inflict your thoughts on others.

Time waits for no man, but he has to wait at least an hour when his wife tells him to "wait just a second."

Only a man's fool friends will refuse to allow him to use his own judgment as to whether he wants a drink or not.

Silence is golden, except when a counterfeiter.

But the chicken-hearted man crows only in his sleep.

Worry gives the undertaker more business than work does.

We all talk too much—because there is so much to talk about.

There's considerable difference between a kicker and a knocker.

Marriage is a failure for a leap year girl who proposed in vain.

Being remembered in a will is as uncertain as an unlaidd egg.

A bride always thinks her husband clever because he married her.

The stage has wings, but that isn't what makes the chorus girls so fly.

Many a girl who loves a man for his money is too modest to mention it to him.

Girls who want to marry are always looking in shop windows for new brands of bait.

The woman who makes fun of a new style one day is usually trying to imitate it the next.

There may be such a thing in the world as pure unselfishness, but nobody seems to be able to locate it.

Beauty is said to be only skin deep, but many a woman's beauty depends upon the size of her balance in the bank.

The Chicago Pneumatic Tool Co.

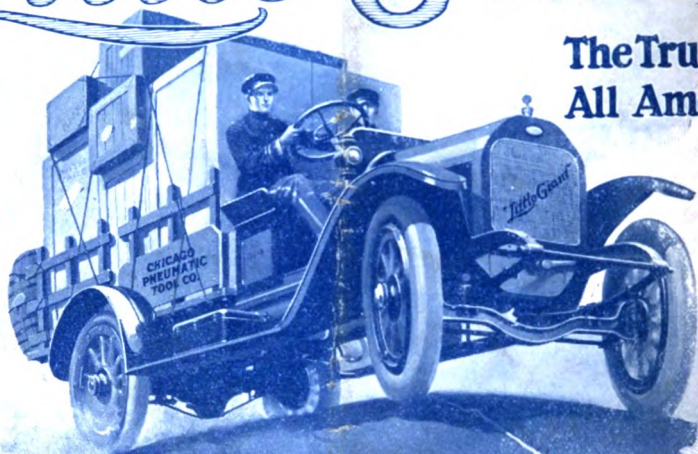
MANUFACTURERS OF THE FOLLOWING

PNEUMATIC TOOLS, APPLIANCES, ETC.

After Coolers	Grinders, Portable Electric
Air Compressors	Hammer Drills, Electric
Air Economizers	Hammer Drills, Pneumatic
Air Forge, Chicago	Hammers, Riveting
Air Motors	Hammers, Chipping and
Air Receivers	Calking
Air Jacks	Hammers, Stone
Air Lifts	Hoists, Duntley Electric
Airoilene Oil	Hoists, Pneumatic Geared
Airoilene Grease	Hoists, Straight Lift
Angle Gears, Little Giant	Holders-on
Angle Gears, Boyer	Hose, Special High Grade
Annealing Machines	Hose Clamp Tool
Armour Scaling Machines	Hose Couplings (Univ'sal)
Automatic Oiling Devices	Inter-Coolers
Bell Ringers, Little Giant	Oil Driven Compressors
Blow-off Cocks, Little Giant	Oil Engines
Chucks, Drill	Painting Machines
Chucks, Expanding	Pipe Bending Machines
Commercial Car	Pneumatic Saws
Drift Bolt Drivers	Pneumatic Plate Stra't'ners
Drills, Boyer	Railway Motor Section Cars
Drills, Keller	Reamers
Drills, Little Giant	Reheaters
Drills, Rock	Rivet Busters
Drilling Stands	Riveters, Jamb
Elevators	Riveters, Yoke
Electric Drills, Duntley	Riveters, Compression
Electric Grinders, Duntley	Sand Rammers
Engineers' Valves	Sand Sifters
Flue Cutters, Chicago	Speed Recorders
Flue Rollers and Ex-	Staybolt Chucks
panders, Little Giant	Stone Dressers
Gas Engines	Staybolt Nippers
Gasoline Driven Com-	Vacuum Pumps
pressors	Water Lifts
Gasoline Engines	Winches, Portable

"Little Giant"

**The Truck for
All America**



From the frozen north to the sandy south—New England hills to rugged Pacific coastland—Little Giant Trucks—thousands of them—are on the job delivering power—delivering goods—delivering saving and profit to their owners. We advocate no experiments and ride no hobbies. Realizing that different sections present different transportation problems, we recommend the style of truck and type of final drive that best fit YOUR locality and YOUR needs.

Little Giant "Help-the-Owner" Department

will help you solve your hauling problems regardless of what truck you decide to buy. Without obligation we will advise you fully and completely—honestly—based on a study of your business and its requirements. Write us a letter now.

Just Published—Mailed on Request.

"Making Deliveries Deliver Profits"

A "facts-is-facts" transportation book of net truths—tabulated results—specific information and advice—worth many, many dollars to the man who has hauling or delivery problems. It covers a wide scope of industries and should be in your business library. Write for your copy—right NOW.



Chicago Pneumatic Tool Co.

Little Giant Bldg., 1615 Michigan Ave., Chicago

Gen. Office, 1014 Fisher Bldg.

Chicago

52 Vanderbilt Ave.

New York

Techn.

12

1916

NEW YORK
LIBRARY

LIBRARY

IDEAL POWER



AUGUST, 1916

A MONTHLY MAGAZINE
PUBLISHED BY THE
**CHICAGO PNEUMATIC
TOOL CO.** CHICAGO NEW YORK

Chicago Pneumatic Tool Company

General Offices, Fisher Bldg.
CHICAGO

Eastern Office, No. 52 Vanderbilt Ave.
NEW YORK

BRANCH OFFICES

BOSTON: 185 Pleasant Street	LOS ANGELES: 925 Title Insurance Bldg.
BIRMINGHAM: 83½ Brown-Marx Bldg.	MILWAUKEE, WIS.: 1310 Majestic Bldg.
BUFFALO: 503 Ellicott Square Bldg.	NEW ORLEANS: 513 Carondelet St.
CINCINNATI: 1008 Mercantile Lib. Bldg.	PHILADELPHIA: 1740-42 Market St.
CLEVELAND: 1241 E. 49th St.	PITTSBURGH: 10 and 12 Wood St.
CLEVELAND: 2122 Euclid Ave.	PORTLAND, ORE.: 46-48 Front St.
DETROIT: 2nd Ave. and Amsterdam St.	RICHMOND, VA.: 1004 Mutual Bldg.
DULUTH, MINN.: Torrey Bldg.	SALT LAKE CITY: 117-19 W. 2nd So. St.
EL PASO: 303 San Francisco St.	SEATTLE: 122 King St.
ERIE, PA.: 12th and Cranberry	ST. LOUIS: 813-19 Hempstead St.
FRANKLIN, PA.: No. 13th St.	ST. PAUL: Pioneer Bldg.
JOPLIN, MO.: 308 Wall St.	SAN FRANCISCO: 71 First St.
LOS ANGELES: 241-43 S. Los Angeles St.	

FOREIGN

Canada: { Montreal, **Canadian Pneumatic Tool Co.**

{ The Holden Co., Ltd., Montreal, Toronto, Winnipeg.

British Columbia: Vancouver, Holden Co., Ltd., 542 Pendar Street, West.

Mexico: Mexico City, The General Supply Co., Av. Isabel La Catolica, No. 51.

Northern Mexico: (Sonora and Chihuahua), Don A. Carpenter & Co., El Paso, Texas.

Great Britain: { London, **The Consolidated Pneumatic Tool Company,**
Spain: { Ltd., 9, Bridge Street, Westminster, S. W
Portugal: {

France: Paris, Anciens Etablissement, Glaenzer & Perreaud, 18-20 Faubourg du Temple.

Belgium: Brussels, The Consolidated Pneumatic Tool Co., Ltd., 22 Chaussee de Forest, Porte de Hal.

Italy: Milan, The Consolidated Pneumatic Tool Co., Ltd., via A. Capellini 7.

Germany:

Austria Hungary:

Balkan States:

Norway:

Sweden:

Holland:

Switzerland:

Denmark:

Berlin, **Internationale Pressluft & Elektrizitäts-Gesellschaft** m. b. H. Berlin C. 54, Weinmeisterhof, Weinmeisterstrasse No. 14.

Russia: Petrograd; Phoenix Engineering Works Co., Ltd., Polustrovskaya. Quay No. 39.

India: { Bombay, **Consolidated Pneumatic Tool Co., Ltd.,** Rampart Row, Fort.

Japanese Empire: Tokyo, Osaka, Seoul, Dairen, The F. W. Horne Co.

Philippine Islands: Manila, Frank L. Strong Mach. Co., 64-68 Calle Echague.

Australia: Sydney, Henry W. Peabody & Co.

New Zealand: Wellington, Henry W. Peabody & Co.

South America: Buenos Aires, Argentina, Evans, Thornton & Co.

South Africa: { Johannesburg, The Consolidated Pneumatic Tool Co., Ltd., 190 Main Street.

Cuba, Havana: J. F. Berndes & Co., Box 349.

Hawaiian Islands, Honolulu: H. S. Gray & Co., 832 Fort St.

BULLETIN DIRECTORY

Requests for these Bulletins should be directed to our Chicago or New York offices or to our nearest branch as shown on inside front cover.

PNEUMATIC TOOLS

- 121...Pneumatic Hammers and Foundry Appliances.
- 124...Pneumatic Riveting, Chipping, Calking and Stone Hammers.
- 125...Pneumatic Yoke, Jam and Shell Riveters, Holders-on, Drift Bolt Drivers, Rivet Busters.
- 127...Pneumatic Drills, Corner Drills, Reamers, Wood Boreers, Flue Rolling and Tapping Machinery and Grinders.
- 128...Miscellaneous equipment for Pneumatic Drills, viz: Chucks, Twist Drills, Reamers, Augers, Flue Cutters, Flue Expanders, Angle Gears.
- 129...Hose, Hose Couplings and Hose Clamp Tools.
- 130...Lubrication of Pneumatic Tools.
- 131...Miscellaneous Tools, viz: Pipe Benders, Air Forge, Bolt Nippers, Drilling Stands, Blow-off Cocks, Bell Ringers, Drill Repair Vises, Painting Machines.
- 132...Pneumatic Motors and Pneumatic Geared Hoists.
- 133...Cylinder Air Hoists and Jacks.
- 34-J...Instructions for Installing and Operating Class O Compressors.
- 34-K...Class N-SO and N-SG Fuel Oil and Gas Driven Compressors.
- 34-L...General Pneumatic Engineering Information.
- 34-M...Class "O" "Chicago Pneumatic" Steam and Power Driven Compressors.
- 34-N...Class N-SS and N-SB Single Enclosed Compressors.
- 34-O...Instructions for the Installation and Care of "Chicago Pneumatic" Gasoline Driven Air Compressors.
- 34-Q...Giant A-O Fuel Oil Engine Applications.
- 34-S...Small Power Driven Compressors.
- 34-U...Instructions for Installing and Operating Class N-SO Fuel Oil Compressors.
- 34-V...Instructions for Installing and Operating Giant Fuel Oil Engines.
- 34-W...Class A-O Fuel Oil Engines.
- 34-X...Class A-G Gas and Gasoline Engines.

ELECTRIC TOOLS

- E-31...Duntley Electric Drilling Stands.
- E-33...Heavy Duty Electric Drills, Direct Current.
- E-35...Duntley Universal Electric Drills.
- E-38...Duntley Electric Hammer Drill.
- E-39...Electric Electric Grinders.
- E-40...Electric Hoists.
- E-41...Duntley Track Drills.

AIR COMPRESSORS AND FUEL OIL ENGINES

- 34-A...Class "G" Steam Driven "Chicago Pneumatic" Compressors.
- 34-C... "Chicago Pneumatic" Gasoline and Fuel Oil Engine Driven Compressors.
- 34-F...Design and Construction Class "G" "Chicago Pneumatic" Compressors.
- 34-G...Air Receivers, Aftercoolers, Reheaters, etc.
- 34-H...General Instructions for Installing and Operating "Chicago Pneumatic" Compressors.
- 34-I...Instructions for Installing and Operating N-SS and N-SB Compressors.

- 213...Simplat Flat Disc Valves.
- 224...Compressor Booklet.
- 236...Oil Engine Booklet.

ROCK DRILLS AND HAND DRILLS

- 148...Chicago Valveless Hand Drills.
- 149...Chicago Portable Mine Hoist.
- 150...Chicago Coal Drills.
- 151...Chicago Slogger Rock Drills.
- 152...Chicago Gatling Drills.
- 153...Chicago Sinker.
- 154...Chicago Stoper.
- 172...Chicago Plug and Feather Drill.
- 192...Stone Tools, etc.
- 216...Hummer Hammer Drills.

LITTLE GIANT TRUCK

Catalogue No. 222.

Booklet:

Making Deliveries Deliver Profits.

ROCKFORD and MISCELLANEOUS

- 42...Boyer Speed Recorder.
- 43...Rockford Railway Motor Car.
- 117...Lubrication of Rockford Cars.
- 119...Operation of Rockford Cars.
- 166...Boyer Speed Recorder with Clock Attachment.

CHICAGO PNEUMATIC TOOL COMPANY

1014 Fisher Bldg., CHICAGO

Branches Everywhere

52 Vanderbilt Ave., NEW YORK

When writing to advertisers please mention Ideal Power.

CONVENTIONS.

August 15, 1916—International Railroad Master Blacksmiths' Association, at Hotel Sherman, Chicago.

August 16-17-18, 1916—The American Association of Railroad Superintendents, at Memphis, Tenn.

August 24-25-26, 1916—American Railway Tool Foremen's Association, at Hotel Sherman, Chicago.

August 29-30-31, Sept. 1, 1916—International Railway General Foremen's Association, at Hotel Sherman, Chicago.

Sept. 5, 1916—The Railway Equipment Manufacturers, at Hotel Sherman, Chicago.

Sept. 5-6-7-8, 1916—The Traveling Engineers' Association, at Hotel Sherman, Chicago.

Sept. 11, 1916—International Union of Steam and Operating Engineers, at Newark, N. J.

Sept. 11-16, 1916—American Foundrymen's Association, at Hotel Statler, Cleveland, Ohio.

Sept. 11-16, 1916—The American Institute of Metals, at Hotel Statler, Cleveland, Ohio.

Sept. 11-16, 1916—American Institute of Mining, at Hotel Statler, Cleveland, Ohio.

Sept. 11-16, 1916—International Union of Steam and Operating Engineers, at Newark, N. J.

Sept. 11-16, 1916—National Association of Stationary Engineers, at Minneapolis, Minn.

Sept. 12-14, 1916—Master Car and Locomotive Painters' Association, at Atlantic City, N. J.

Sept. 12-13-14, 1916—Railway Signal Association, at Grand Hotel, Mackinac Island, Mich.

Sept. 18-22, 1916—Roadmasters' and Maintenance of Way Association, at Hotel McAlpin, New York City.

Oct. 9-13, 1916—American Electric Railway Association, at Atlantic City, N. J.

Oct. 17-19, 1916—American Railway Bridge and Building Association, at New Orleans, La.

Oct. 17-18-19, 1916—Maintenance of Way Master Painters' Association of United States and Canada, at Philadelphia.

Oct. 29 to Nov. 3, 1916, Inc.—Association of Railway Electrical Engineers, at Hotel La Salle, Chicago.

Nov. 13-18, 1916—American Mining Congress, at Hotel La Salle, Chicago.

Dec. 5-8, 1916—The American Society of Mechanical Engineers, in the Engineering Societies' Building, New York City.

Jan. 19, 1917—American Society of Engineering Contractors, at New York City.

Feb. 5-10, 1917—American Road Builders' Association, at Boston.

Feb. 21-28, 1917—American Institute of Mining Engineers, at New York City.

March 20-22, 1917—American Railway Engineering Association, at Chicago.

ENGINEERING SOCIETIES, ETC.

American Association of Railroad Superintendents (General)—General Secretary, E. H. Harman, St. Louis, Mo.

American Concrete Institute—President, L. C. Wason, 27 School St., Boston, Mass.; Secretary, Harold D. Hynds, 50 Broad St., New York City.

American Electric Railway Association—Secretary-Treasurer, E. B. Burrill, 8 W. 40th St., New York, N. Y.

American Electro-Platers Society—President, W. S. Barrows, Toronto, Canada; Secretary-Treasurer, Walter Fraine, 507 Grand Avenue, Dayton, Ohio.

American Highway Association, Colorado Bldg., Washington, D. C.

American Institute of Electrical Engineers—President, John J. Carty, 15 Dey St., New York; Secretary, F. L. Hutchinson, 33 W. 39th St., New York.

American Institute of Mining Engineers—Secretary, Bradley Stoughton, 29 W. 39th St., New York City.

American Mining Congress—Secretary, J. F. Callbreath, Jr., 743 Munsey Bldg., Washington, D. C.

American Order of Steam Engineers—Supreme Chief Engineer, J. W. Parent, Philadelphia, Pa.; Supreme Corresponding Engineer, Edw. A. Reboul, 1110 Earl St., Philadelphia, Pa.

American Railway Engineering Association—Secretary, E. H. Fritch, 1011 Karpen Bldg., Chicago, Ill.

American Road Builders' Association—Sec-

retary, E. L. Powers, 150 Nassau St., New York.

American Society of Civil Engineers—Secretary, Chas. Warren Hunt, 220 W. 57th St., New York City.

American Society of Engineering Contractors (Inc.)—Secretary, J. H. Wemlinger, South Ferry Bldg., New York City. Meetings: Second Thursday, every month.

American Society of Heating and Ventilating Engineers—Secretary, C. W. Obert, 29 W. 39th St., New York City.

American Society of Mechanical Engineers—Secretary, Calvin W. Rice, 29 W. 39th St., New York City.

American Society of Naval Engineers—Secretary-Treasurer, Lieut. A. T. Church, U. S. N., Navy Department, Washington, D. C.

American Water Works Association—Secretary, J. M. Diven, 47 State St., Troy, N. Y.

Association of Civil Engineers, Cornell University—President, A. F. Williams, Ithaca, N. Y.; Secretary, A. S. Patrick, Ithaca, N. Y.

Association of Railway Electrical Engineers—Secretary, J. A. Andreucetti, C. & N. W. Ry. Co., Chicago, Ill.

Boston Society of Civil Engineers—Secretary, S. Everett Tinkham, 715 Tremont Temple, Boston, Mass.

Canadian Society of Civil Engineers—Secretary, Clement H. McLeod, 176 Mansfield St., Montreal, Can.

Canadian Railway Club—Secretary, James Powell, Grand Trunk Ry., Montreal, Que.

Central Railway Club—Secretary, H. D. Vought, 95 Liberty St., New York.

Civil Engineers' Society of St. Paul—Secretary, Edw. J. Dugan, Room 7, Old State Capitol Bldg., St. Paul, Minn.

Cleveland Engineering Society—Secretary, C. E. Drayer, Chamber of Commerce Bldg., Cleveland, Ohio.

Connecticut Society of Civil Engineers—President, Clarence Blakeslee, New Haven, Conn.; Secretary-Treasurer, J. Frederick Jackson, Box 1304 New Haven, Conn.

Detroit Engineering Society—Secretary-Treasurer, B. V. Williamson, 1800 David Whitney Bldg., Detroit, Mich.

Engineering Association of the South—Secretary-Treasurer, W. Harwell Allen, 928 Stahlman Bldg., Nashville, Tenn.

Engineers' Club of Cincinnati—Secretary, E. A. Gast, P. O. Box 333, Cincinnati, Ohio.

Engineers' Club of Minneapolis—President, L. S. Gillette, 74 Chamber of Commerce, Minneapolis, Minn.; Secretary, Louis Clousing, 2411 Oakland Ave., Minneapolis.

Engineers' Club of Philadelphia—Secretary, R. H. Fernald, 1317 Spruce St., Philadelphia, Pa.

Engineers' Club of St. Louis—Secretary, W. W. Horner, 5203 Maple Ave., St. Louis, Mo.

Engineering Society of Purdue University, Lafayette, Ind.—Secretary, C. B. Penrod, 123 State St., W. Lafayette, Ind.

Engineering Society of Buffalo—President, John Younger; Secretary, W. J. Gamble, 247 Rano St.

Engineers' Society of Pennsylvania—Secretary, E. R. Dasher, 31 S. Front St., Harrisburg, Pa.

Engineers' Society of Northeastern Pennsylvania—Secretary, T. F. McKenna, care of Engineers' Club, Scranton, Pa.

Engineers' Society of Western Pennsylvania—Secretary, Elmer K. Hiles, 2511 Oliver Bldg., Pittsburgh, Pa.

Illinois Society of Engineers—Secretary, E. E. Trautman, Wheaton, Ill.

Indiana Engineering Society—Secretary, Chas. Brosmann, Indianapolis, Ind.

International Railway Congress Association—President (of the International Commission), W. Toudeller, 11 Rue de Louvain, Brussels, Belgium; Secretary, General L. Weissenbruch, same address.

Iowa Engineering Society—Secretary-Treasurer, Prof. J. H. Dunlap, Iowa City, Iowa.

Lake Superior Mining Institute—Secretary, A. J. Yungbluth, Ishpeming, Mich.

Louisiana Engineering Society—President, Samuel Young; Secretary, W. T. Hogg, P. O. Sta. 20, New Orleans, La.

Michigan Engineering Society—President, Geo. W. Bissell, East Lansing, Mich.; Secretary, Samuel J. Hoexter, Kalamazoo, Mich.

Montana Society of Engineers—President, Martin H. Gerry, Jr., Helena, Mont.; Secretary, Clinton H. Moore, Butte, Mont.

New England Association of Commercial Engineers—Secretary, F. S. Eggleston, Jr., 53 Devonshire St., Boston, Mass.

New England R. R. Club—Secretary, W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass.

New York Railroad Club—Secretary, Harry D. Vought, 95 Liberty St., New York, N. Y.

Ohio Engineering Society—President, Clyde T. Morris, O. S. V., Columbus, Ohio.; Secretary, Jno. Laylin, Norwalk, Ohio.

Ohio Society of Mechanical, Electrical and Steam Engineers—Secretary-Treasurer, Frank E. Sanborn, Ohio State University, Columbus, Ohio.

Railway Club of Pittsburgh—Secretary, J. B. Anderson, Room 207, Penn. R. R. Station, Pittsburgh, Pa.

Richmond Railroad Club—Secretary, F. O. Robinson, C. & O. Railway, Richmond, Va.

Rochester Engineering Society—Secretary-Treasurer, F. C. Taylor, 34 Clinton Ave. North, Rochester, N. Y.

St. Louis Railway Club—Secretary, B. W. Frauenthal, Union Station, St. Louis, Mo.

Southern & Southwestern Railway Club—Secretary, A. J. Merrill, Grant Bldg., Atlanta, Ga.

Toledo Society of Engineers—President, L. M. Gram, 1047 Spitzer Bldg., Toledo, O.; Secretary, L. T. Owen, 1047 Spitzer Bldg., Toledo, O.

Regular meeting, second Friday in each month.

Utah Society of Engineers—Secretary, Hugh C. Ellis, Capitol Bldg., Salt Lake City, Utah. Third Wednesday of each month, except July and August.

Vermont Society of Engineers—Secretary, Geo. A. Reed, Montpelier, Vt.

Western Railway Club—Secretary, J. W. Taylor, 1112 Karpen Bldg., Chicago, Ill.

Western Society of Engineers—President, B. E. Grant, 207 City Hall, Chicago; Secretary, E. N. Layfield, 1735 Monadnock Bldg., Chicago.

MECHANICAL AND TRADE SOCIETIES.

Air Brake Association—Secretary, F. M. Neil, 3014 165 Broadway, New York, N. Y.

American Boiler Manufacturers' Association—President, W. C. Connelly, Ivanhoe Road and Nickel Plate R. R., Cleveland, Ohio; Secretary, J. D. Farasey, 37th and Erie Ry., Cleveland, Ohio.

American Electric Railway Association—Secretary-Treasurer, E. B. Burrill, 8 W. 40th St., New York City.

American Electric Railway Manufacturers' Association—Secretary-Treasurer, H. G. McConaughty, Suite 1002, 165 Broadway, New York City.

American Foundrymen's Association—Secretary, A. O. Backert, 12th and Chestnut Sts., Cleveland, Ohio.

American Institute of Metals—Secretary-Treasurer, W. M. Corse, 106 Morris Ave., Buffalo, N. Y.

American Railway Association—General Secretary, J. E. Fairbanks, 75 Church St., New York City.

American Railway Bridge and Building Association—President G. W. Rear, So. Pac. Co., San Francisco, Cal.; Secretary-Treasurer, C. A. Lichty, C. & N. W. Ry., Chicago.

American Railway Master Mechanics' Association—President, E. W. Pratt, A. S. M. P. & M., care of C. & N. W. Ry., Chicago, Ill.; Secretary, J. W. Taylor, Karpen Bldg., Chicago.

American Railway Tool Foremen's Association—Secretary, O. D. Kinsey, Illinois Central R. R., Chicago.

American Road Builders' Association—Secretary, E. L. Powers, 150 Nassau St., New York. Boiler Makers' Supply Men's Association—Secretary, Geo. Slate, The Boiler Maker, 17 Battery Pl., New York City.

Canadian Association of Stationary Engineers—Secretary, W. A. Crockett, Mount Hamilton, Ont., Can.

Canadian Roadmasters' Association—Secretary, J. M. McKenzie, West Toronto, Can.

Car Foremen's Association of Chicago—President, A. La Mar, Master Mechanic, Penn R. R.,

Chicago, Ill.; Secretary, Aaron Kline, 841 N. Lawler Ave., Chicago.

General Superintendents' Association of Chicago—Secretary, A. M. Hunter, 321 Grand Central Station, Chicago.

International Railroad Master Blacksmiths' Association—Secretary, A. L. Woodworth, C. H. and D. Ry., Lima, Ohio.

International Railway Fuel Association—Secretary-Treasurer, J. S. Crawford, 702 E. 51st St., Chicago.

International Railway General Foremen's Association—Secretary-Treasurer, Wm. Hall, C. & N. W. Ry., 1126 W. Broadway, Winona, Minn.

International Union of Steam and Operating Engineers—President, Matt Comerford; Secretary-Treasurer, James G. Hannahan, 6334 Yale Ave., Chicago.

Master Boiler Makers' Association—President—Andrew S. Greene, Big Four R. R., Indianapolis, Ind.; Secretary-Treasurer, Harry D. Vought, 65 Liberty St., New York City.

Master Car Builders' Association—President, D. R. McBain, S. M. P., care of N. Y. C. R. R., Cleveland, Ohio; Secretary, J. W. Taylor, Karpen Bldg., Chicago, Ill.

Master Car and Locomotive Painters' Association—Secretary, A. P. Dane, B. & M. R. R., Reading, Mass.

Maintenance of Way Master Painters' Association of United States and Canada—Secretary, F. W. Hager, The Denver Road, Ft. Worth, Texas.

National Association of Manufacturers—President, Col. Geo. Pope, Hartford, Conn.; Secretary, Geo. S. Budinot, New York City.

National Association of Stationary Engineers—Secretary, Fred W. Raven, 417 S. Dearborn St., Chicago, Ill.

National Founders' Association—Secretary, J. M. Taylor, Room 322, 29 S. La Salle St., Chicago, Ill.

National Railway Appliances Association—Secretary-Treasurer, C. W. Kelly, Chicago, Ill.

Pacific Northwest Society of Engineers—President, Archibald Downey, Secretary, Harrison S. Taft, Central Bldg.

Purchasing Agents' Association of Pittsburgh—President, E. L. McGraw, Standard Underground Cable Company, Pittsburgh; Secretary, H. E. Harmon, Des Moines Bridge & Iron Works, Pittsburgh.

Railway Equipment Manufacturers' Association—President, F. N. Bard, Barco Brass and Joint Co., Chicago; Secretary, W. E. Brumble, Galena Signal Oil Co., Richmond, Va.

Railway Signal Association—President, W. J. Eck, Southern Ry., Washington, D. C.; Secretary, C. C. Rosenberg, Bethlehem, Pa.

Railway Storekeepers' Association—President, J. G. Stuart, G. S. K., care of C. B. & Q. R. R., Chicago, Ill.; Secretary, J. P. Murphy, Box C, Collinwood, Ohio.

Railway Supply Manufacturers' Association—Secretary-Treasurer, J. D. Conway, 2136 Oliver Bldg., Pittsburgh, Pa.

Roadmasters' and Maintenance of Way Association—Secretary, P. J. McAndrews, C. & N. W. Ry., Sterling, Ill.

Traveling Engineers' Association—Secretary, W. O. Thompson, N. Y. C. Car Shops, East Buffalo, N. Y.

A Kentucky colonel of the old school had made it a proud boast that he hadn't drunk a glass of water in twenty years. One day the train on which he was riding was wrecked while crossing a bridge, and plunged into the river. They pulled the colonel out with a boat-hook, and when they got him on shore, one of his friends rushed up, crying:

"Colonel, are you hurt?"

"No!" he snorted. "Never swallowed a damn drop!"



"CLEVELAND" Bridge Reamers

These reamers are designed for rough, severe service in structural iron and steel work and boiler plates. They are particularly adapted for use in pneumatic and electric portable tools. Write for Circular U.

The **CLEVELAND** Twist Drill Co.

Chicago

CLEVELAND

New York

NECESSITIES

High Grade Rubber Goods

Fire Hose

Reels, Nozzles

Fire Hose Carts

Rubber Cement

P. & W. Rubber Preservative

Rubber Boots

Leather-Soled Rubber Boots

Leather Belting

Upholsterer's Leather

Leather and Silk Fringes

Vestibule Diaphragms

Gimp

Brass Nails

Leather Head Nails

Signal Flags

Bunting

Linoleum

Cab Cushions

Cab Curtains

Track Jacks

Economy Soap Stock

Nut Locks

GUILFORD S. WOOD

Great Northern Building,

CHICAGO, ILLINOIS.

BURKE ELECTRIC COMPANY

MAIN OFFICE AND WORKS

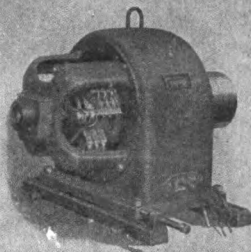
ERIE, PA.

BULLETIN 109

JANUARY, 1910

DIRECT-CURRENT MOTORS AND GENERATORS

WEEKLY 10 CENTS PER COPY



TYPE 10 MOTOR WITH FIELD AND FLYWHEEL

Direct Current Motors

of robust characteristics are illustrated and described in this bulletin.

If you have not yet read about them, send for a free copy.

**BURKE
ELECTRIC
COMPANY**

**ERIE,
PA.**

BURKE ELECTRIC CO., Erie, Pa.
Please Send Bulletin 109-C

Name.....
Address.....

When writing to advertisers please mention Ideal Power.

IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances and Motor Trucks
By THE IDEAL POWER PUBLISHING COMPANY
Fisher Building, Chicago

VOL. XII

AUGUST, 1916

No. 2

Motor Trucks Give Extra Hour of Industrial Daylight

An Interview with President W. O. Duntley

Motor trucks have solved that "extra hour of daylight" discussion as far as business is concerned, in the opinion of W. O. Duntley, president of the Chicago Pneumatic Tool Co., and pioneer builder of trucks.

Compared with the horse-drawn method, the motor truck adds an hour to each end of the day, he says, with the result that "motorize" has become the transportation watchword and the motor truck an industrial necessity.

"Heretofore, interest has been concentrated in the pleasure car side of the automobile business, said Mr. Duntley"; but now business concerns large and small are regarding the automobile truck as the vital part of their life. Business men have been aroused through this remarkable interest in business efficiency, and have come to regard the motor truck as a big money-saving factor in their welfare—as a labor-saving device keeping the efficiency pace.

"Business men have speeded up efficiency in their factories and in their selling department; but they have overlooked the other factor which is so essential to the conservation and expansion of both manufacturing and selling the finished product.

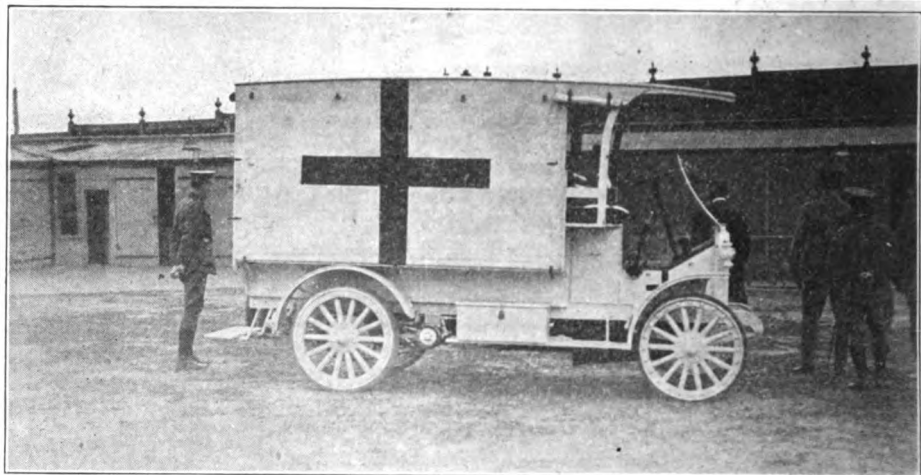
"During the past twenty-five years, the Chicago Pneumatic Tool Company has

been devoting the concentrated brain power of the country's greatest inventors and engineers in the development and manufacture of all manner of labor-saving devices—tools for the speeding up of all manner of work.

"Eight years ago, we came to a realization of the fact that the transportation problem presented one of the greatest opportunities for a labor-saving device; with the result that interest was at once concentrated on the production of a labor-saving tool of transportation—the motor truck.

"Pneumatic, riveting-hammers were used by erection engineers to speed up construction work. Other mechanical, labor-saving tools were designed and constructed to speed up all manner of other operations. How could they keep pace with the advanced speed of manufacturing and building, unless they were able to speed up means of transportation? The motor truck was the logical solution of this problem.

"The Chicago Pneumatic Tool Company was the logical organization to undertake the manufacture of a satisfactory motor truck because of the inventive ability of its engineers, because of the precise training of its mechanics, because of its ability to produce for its countless customers what was to be the greatest



A Little Giant in the Red Cross Service. Ten of these are with the Australian contingent "somewhere in Europe."

labor and time-saver of all—the motor truck.

"The means at hand enabling the most searching tests of materials, the same micrometer tests of finished working parts, down to the thousandths of an inch that typify the efficient manufacture of other tools, based on years and years of successful training and manufacture, place the Chicago Pneumatic Tool Company on a pinnacle of importance as the builder of the labor and time-saving motor truck. During the past two years the Little Giant truck has been perfected to a point where it is now entrenched in a position of strength, in line with the best production of the Chicago Pneumatic Tool Company.

"Efficiency engineers and systematizers universally have given the motor truck the position to which it is entitled as a dividend payer, lowering, as it does, the cost of hauling, widening the range of operations, placing at the owners' disposal a twenty-four hour, three hundred and sixty-five-day service under any and all weather conditions, and giving at minimum cost the power to equalize the speeding up throughout other departments, and—one of the most important considerations—satisfy the demands of customers for greater speed all along the line."

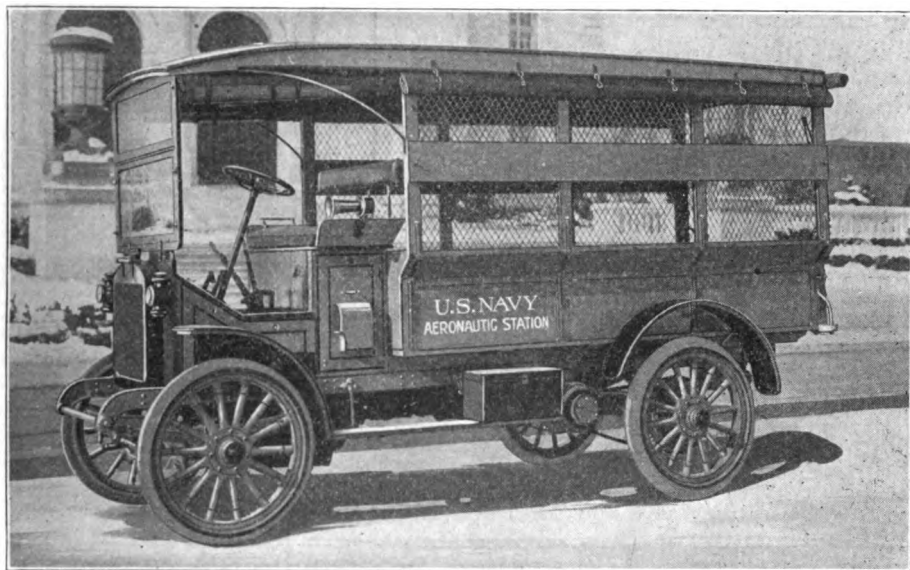
Navy Aero Service Installs Little Giant Motor Trucks.

Preparedness propaganda is taking visible effect in increasing the efficiency of the U. S. Aeronautic service. The navy department has recently installed a motor truck tender service at aeronautic stations for the transportation of knock-down aeroplanes, supplies and ammunition.

The extremely wide range of traction conditions necessitated exhaustive tests by U. S. engineers, who finally adopted the Little Giant Model H, 1-ton chain drive as the best adapted to deep sand and mud, and because of its performance on rough roads and steep grades.

The Little Giant truck here pictured was photographed in Washington at the time of its acceptance by the naval authorities. It is now on duty at the Pensacola, Fla., U. S. Naval Aeronautic Station, where it is called upon to transport heavy loads over stretches of deep sand and rough going encountered in the serving of aeroplanes on the government's proving grounds.

This installation is prophetic in connection with recent developments in both the army and navy, where the motor truck as a means of rapid transportation



A Little Giant in the service of Uncle Sam, attached to the Aeronautic Service of the U. S. Navy in Florida.

as well as an armored fighting machine, is playing an important part.

The absolute necessity of the motor truck has been eloquently demonstrated during the past few weeks in keeping up traffic communication between supply bases and the extended United States lines of march in Mexico. In short-cutting distances not traversed by railroads, the motor truck is solving a great transportation problem for our country in times of peace, and in defense of its rights and policies.

A Long Shot.

Ma—You've been drinking. I smell it in your breath.

Pa—Not a drop. I've been eating frog's legs. What you smell is the hops.

Skinner Mulvey says: Bud Connors will deliver a lecture on the Panama Canal. It will be illustrated with slides. Old Pop Hilsey has shaved off his mustache so's he can smoke his cigars closer.

Little Giant Truck Makes Perfect Score in 142 Mile A. A. A. Rigid Test.

On the recent reliability run of motor trucks from Los Angeles to San Diego, the Little Giant Model 15 Worm Drive truck made a perfect score, carrying a capacity load.

This is one of the most successful demonstrations of commercial vehicle efficiency in the history of the industry.

At the close of the gruelling run of 142 miles, rigid tests were made at the grounds of the Panama-California Exposition, and all working parts found in perfect condition.

The two-day grind proved that the modern motor truck is equal to the severest tests, and it further demonstrated the phenomenal progress that has been made in the design and construction of the freight-carrying machine.

Carrying a capacity load, the Model 15 Little Giant truck finished the trip in good mechanical condition, and was not tardy at any of the three controls.

Mr. H. L. Miller, Pacific Coast distributor, had charge of the Little Giants in this test.

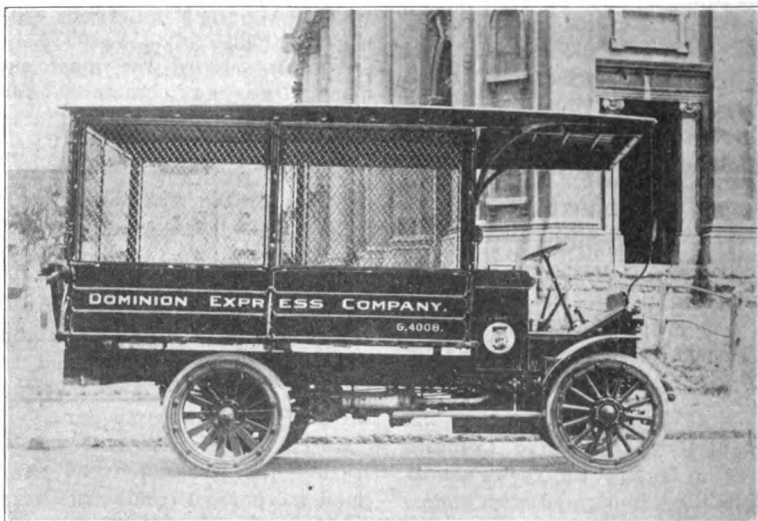


A Model 16 Two-Ton Little Giant Truck delivering the goods in Chicago, while attracting the attention of prospective customers through its strong advertising display.

The Little Giant in Canada

Nowhere has the Little Giant Truck made greater strides than in Canada. The Dominion Express Company of Montreal is the latest addition to the Little Giant fold—strenuous and repeated tests having convinced them that the Little Giant had the power and endur-

ance that is required of motor trucks in express service. Mr. Geo. J. Sheppard, Manager of the Canadian Branch at Montreal, has just wired an order for four 1½-ton Little Giants and is enthusiastic over the business he has booked and the prospects in sight. This will be a banner year for the Little Giant in Canada.



A Model H Little Giant in express service in Montreal. The short wheel base of the Model H permits of its use in extremely congested districts, making it an ideal truck for express service.

SEND FOR THIS BOOK

Delivery and Hauling Problems are Discussed by Experts

MAKING DELIVERIES DELIVER PROFITS

LITTLE GIANT TRUCKS

are made in worm
and chain drives,
and in 1-ton, 1½ tons
and 2 tons capacities.

Little in Upkeep
Giant in Service

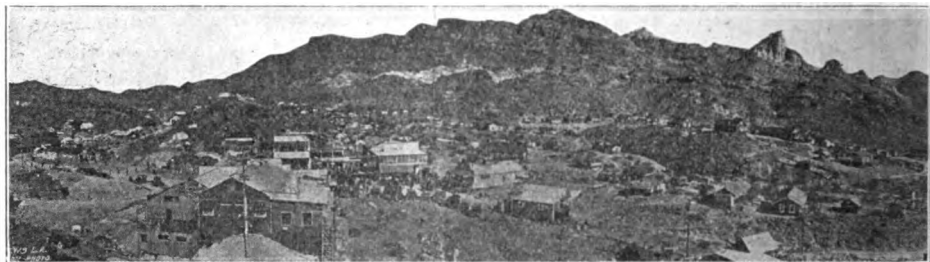
A COPY OF THIS BOOKLET WILL BE SENT TO EVERY IDEAL POWER
READER WHO REQUESTS ONE. ADDRESS

Chicago Pneumatic Tool Company
Little Giant Building CHICAGO 1615 Michigan Avenue

This is a facts-is-facts transportation book of net truths—tabulated results—specific information and advice—worth many, many dollars to the man who has hauling or delivery problems. It covers a wide scope of industries and should be intensely interesting to every man who has goods to haul.

¶ This booklet represents a sincere and consistent effort on the part of the Chicago Pneumatic Tool Company to give concrete and useful information on hauling methods for increased profits.





A birds-eye view of Oatman soon after the boom struck it. "Chicago Pneumatic" Fuel Oil Compressors and other modern machinery are now assisting the miner in his quest for gold in this vicinity.

Oatman the New Eldorado.

Oatman, the new "land of promise" is booming. If a tenth of the tales of its enthusiastic citizens is true, Oatman in the years to come will produce more gold than the Klondike, Reno and Goldfield together.

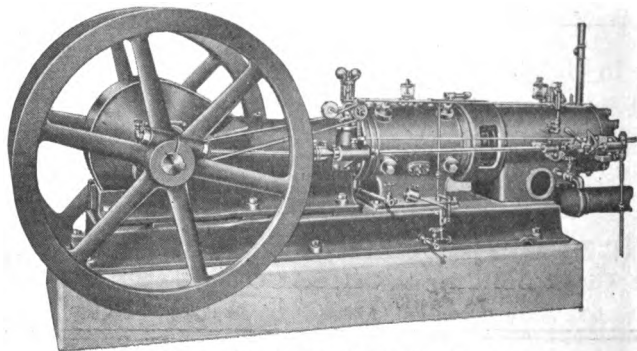
A year ago with the exception of two small mines, Oatman was a lonesome desolate desert, peopled mostly with rattlesnakes and lizards. Today it is a hustling little city teeming with a population of many thousands, containing cottages, mills, banks and stores with paved streets and projects on foot for water works, electric lights and railroads. Such is the short biography of the new Eldorado.

Mr. M. W. Priseler, Western manager of the Chicago Pneumatic Tool Co., acting as staff reporter for Ideal Power, recently wrote: "When I first went to Oatman there were only a few shacks and two or three stores. My quarters consisted of a mattress on the

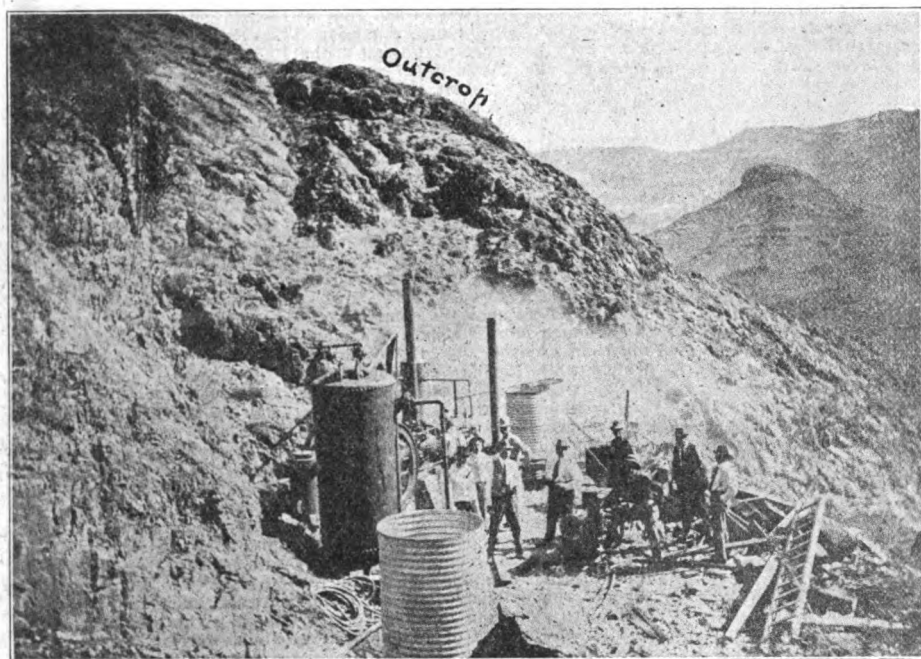
floor in the back end of a little grocery store, without any roof above and a constant scurrying of rats around you and below. It is absolutely true we couldn't wash our face and hands in the morning for lack of water and we paid \$1 for two fried eggs."

The story of Oatman is the story of a town that "came back." Gold was discovered there in the late '70s by a Mexican, Jose Jeneres, and news of his discovery brought the usual rush of gold seekers. But the pockets of gold were shallow and one by one the miners left and the mines closed down with the exception of the Gold Roads mine and the Tom Reed. The two latter, however, have been constant producers for many years.

The wild days of the old gold camp have not been resurrected in the newer Oatman camp. The broad hat and long hair of Wild Bill and Captain Jack Crawford, together with the buckskin sack of gold are missing from the pic-



N-SO Chicago Pneumatic Fuel Oil Compressor.



A "Chicago Pneumatic" Fuel Oil Compressor Installation at the Mines of the Jerome-Oatman Mining Co., Oatman, Arizona.

ture. No red liquor (for Arizona is prohibition), no Keno, no killings, no click of poker chips recall the good old days. The burro has been succeeded by the auto and motor truck. Only the gold and the growing crowds recall to Oatman its almost forgotten past.

Oatman offers little opportunity for the man with nothing but pick and shovel to go out and scratch a fortune out of the ground. The new veins are found 300 or more feet deep. Skilled engineers, systematic management, large staffs of workmen, up-to-date buildings and the latest mining machinery are required to produce gold profitably. Prominent among the mining machinery installed by the new mines are many "Chicago Pneumatic" Compressors. The illustration above shows a "Chicago Pneumatic" class N-SO Fuel Oil Driven Compressor in operation at the mine of the Jerome-Oatman Mining Co. Many other "Chicago Pneumatic" Compressors have since been installed in this district.

The Gold Road, with its \$4,000,000 of dividends, the Tom Reed, with over \$3,000,000 of dividends and the United Eastern with over \$10,000,000 in gold blocked out, entitle Oatman to serious recognition as one of the greatest gold camps in the world. The magic wand of fortune touched Goldfield nine years ago when the world's demand for gold was acute. Today fortune responds to the world's cry for more wealth to offset the waste of the European war by pointing to Oatman.

"Johnnie," said his father, "I'm surprised to hear that you have dared to dispute with your mother."

"But she was wrong, pa," replied Johnnie.

"That has nothing to do with it," said the father; "you might just as well profit by my experience and learn once and for all that when a woman says a thing is so, it is so, whether it is so or not."



The above photo shows a 16x10x12 "Chicago Pneumatic" Compressor, near Boise Basin, Idaho, the sale having been made to the Boise Basin, situated about sixty-five miles northeast of Boise. The Boise Basin, situated about sixty-five miles northeast of Boise, is said to contain more placer gold than any other one locality, and scores of miners are working in this territory. All indications seem to prove that the Boise Basin furnished the gold for the placer mines.

A Large Compressor Economically Operated.

Yellow Aster Mining and Milling Company, Randsburg, California, is strong for Chicago Pneumatic Compressors as evidenced by the following letter addressed to our Los Angeles office:

In answer to your inquiry as to our new 1200 cubic foot Class O-CB, two-stage power driven air compressor of your make which we purchased from you some time ago—it is very seldom that I feel like going into print, but this installation has been so satisfactory, and we have been so courteously and fairly treated by you, that I feel called upon to express my heartiest appreciation of your company and the service which it renders.

Regarding the compressor—as you know we had considerable trouble with two different makes and naturally we were of the opinion that we might have trouble with yours, so were very skeptical. Immediately after the last bolts were tightened and the installation work completed, the power was turned on and the machine has been operating continuously ever since.

We like the self-oiling and noiseless features very much, and as for efficiency, your step capacity regulation at partial and no loads shows immediately that it is very efficient over others from the readings on the ammeter.

The large capacity inter-cooler is also very effective in getting best possible economy, especially in this climate



ssor arriving through eight feet of snow at the mines of the Diana by the F. C. Richmond Machinery Co., of Salt Lake City. is famous in the gold mining history of the country for producing have become fabulously rich as a result of their placer mining oper- Mines Co., Ltd., have fortunately discovered the Mother Lode that

where we have such long continued hot weather.

You may refer any of your customers to us at any time.

Very truly yours,

W. J. COTTON,

2d Vice Prest. & Mng. Director.

Advantages of the Crosshead Construction of Giant Oil Engines.

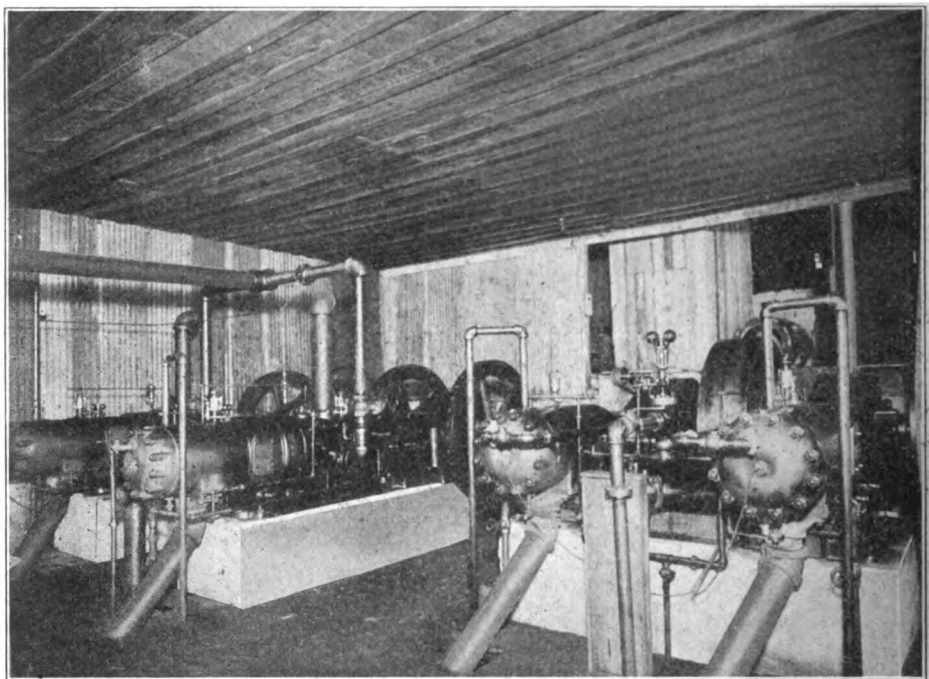
In any two cycle engine not fitted with a crosshead it is necessary to have the crank case as nearly air tight as possible. The compressing of the air for scavenging the cylinder must be done in the crank case and if it is not tight, air will leak out and impair the scavenging, and therefore the proper operation of the engine. This is so important that some

builders put stuffing boxes on the outer ends of main bearings. The crank case covers are all necessarily small and are bolted down on gaskets. This makes the parts within the case very inaccessible.

In GIANT engines the air for scavenging is compressed in the crank end of the cylinder and the crank case therefore does not need to be air tight.

When a crosshead is not used it is much more difficult to keep the bearings and particularly the piston pin; which must be used in all such engines, properly lubricated. Splash lubrication is dangerous because the lubricating oil in the crank case is liable to be carried through the intake port with the scavenging air and cause the engine to run away.

In GIANT engines the crosshead construction permits the crank end of the



Two "Chicago Pneumatic" Class N-SG 14x9½x14 Gas Driven Compressors and one Giant Class A-DG 14x14 Gas Engine used by the Coralbut Mining Co. at Chitwood, near Joplin, Mo. There are dozens of similar installations in the Joplin district, and Giant Gas and Fuel Oil Engines are everywhere giving wonderful results.

cylinder to be closed, hence, lubricating oil cannot reach the transfer port and splash lubrication can be safely used.

When no crosshead is used the piston must act as a crosshead and the cylinder act as a guide. In such an engine the piston must be made longer than otherwise necessary, in order to have room for the piston pin and to prevent as much as possible excessive wear on both piston and cylinder, caused by the piston being forced hard against the top and bottom of the cylinder by the action of the connecting rod.

This uneven cylinder wear can never be entirely prevented without the use of a crosshead, and as it increases it permits oils of heavy base to work back and under the piston rings, hardening there and causing additional wear. The disadvantages do not stop here. The extra friction covered by lengthening the cylinder and crosshead is greater than the friction of a crosshead.

In GIANT engines the use of a crosshead permits both piston and cylinder to be shortened. Friction is also minimized, and the forcing of the piston against the top and bottom of the cylinder entirely prevented.

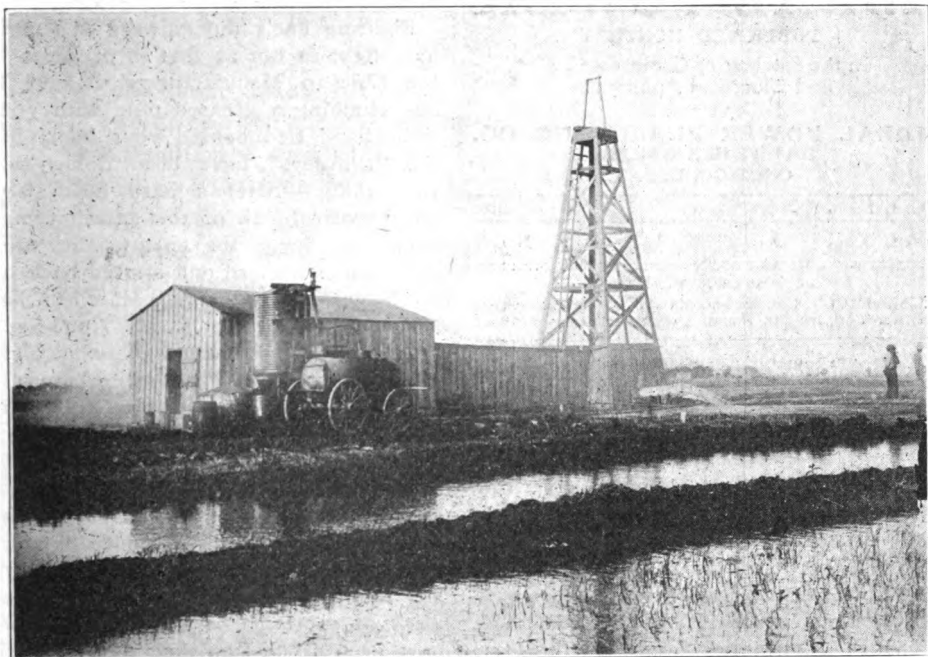
Crosshead construction adds great stability to a machine. There is little doubt but that the addition of this one feature doubles the working life of an engine.

If you are interested in Fuel Oil Engines send for Bulletin 34 W, which tells all about the Giant.

"The evening wore on," continued the man who was telling the story.

"Excuse me," interrupted the would-be wit, "but can you tell us what the evening wore on that occasion?"

"I do not know that it is important," replied the story teller, "but if you must know, I believe it was the close of a summer day."



View of Pumping Plant of Z. T. Young, Opelousas, La. A Class A-DO Giant Fuel Oil Engine furnishes the power. Last season 315 acres of land were irrigated, yielding 4,000 bags of rice. Those interested in the pumping of deep wells should correspond with our Water Lift Department.

True Patriotism.

During a peculiarly bad dust storm at one of the camps a recruit ventured to seek shelter in the sacred precincts of the cook's domain.

After a time he broke an awkward silence by saying to the cook:

"If you put the lid on the camp kettle you would not get so much dust in your soup." The irate cook glared at the intruder and then broke out:

"See here, my lad, your business is to serve your country."

"Yes," interrupted the recruit; "but not to eat it."

A tailor in a certain town had as a sign an apple, simply an apple. People came in crowds to the tailor, asking him what on earth the meaning of the sign was. The tailor replied, "If it hadn't been for an apple where would the clothing business be?"

Roundabout.

Necessity is the mother of invention, and the hungry Frenchman told about in a biography recently published in England illustrates the old adage anew.

He was in an English restaurant and wanted eggs for breakfast, but had forgotten the English word. So he got around the difficulty in the following way:

"Vaiterre, vat is dat valking in the yard?"

"A rooster, sir."

"Ah! and vat you call de rooster's wife?"

"The hen, sir."

"And vat you call de children's of de rooster and his wife?"

"Chickens, sir."

"But vat you call de chicken before dey are chickens?"

"Eggs, sir."

"Bring me two."

IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air
and Electrical Appliances

BY THE

IDEAL POWER PUBLISHING CO.
1014 FISHER BUILDING
CHICAGO, U. S. A.

C. I. HENRIKSON

Editor

Vol. XII. AUGUST, 1916

No. 2

TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year
Other Countries in Postal Union, 50 cents per year

ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our
subscription list

A Cordial Invitation.

Visiting members of the American Foundrymen's Association, their guests and others are cordially invited to visit the Chicago Pneumatic Tool Company's Exhibit at the Coliseum in Cleveland, September 11th to 18th during the Foundrymen's Convention. Special efforts are being made by those in charge to make the convention a memorable success, and all who can so arrange their affairs are urged to attend and lend their support. The exhibit will be complete and will represent the last word in every branch of foundry practice, and to keep abreast of the times, no one who has common cause with foundrymen can afford to stay away. And don't fail to visit the Chicago Pneumatic Tool Company's exhibit in the Coliseum and let its representatives give you the glad hand.

Situations Wanted.

Wanted: Position with live tank manufacturer as superintendent. Can handle riveting gangs with up-to-date result getting methods. Several years experience. Address Ideal Power Ad. 20.

Situation Wanted.—By a man with seventeen years experience as superintendent of steel plate and sheet metal construction, tank work. Thoroughly familiar with the handling of men. Best references. Address Ideal Power, Ad 21.

A Word From Our Sporting Editor

Fighting one's way upward in a penant fight as hot as that in progress in the Chicago Manufacturers' League is like climbing a greased pole with your right hand tied behind your back, but the "Duntleys" have been doing that very thing. After a hard luck start, when every break of the game seemed always to favor the enemy, they dug their spikes in hard and started back up the ladder. Manager P. J. Hamilton has his boys doing the Royal None-Such now. They are coping game after game. They are at this moment securely clamped in third place, and were the schedule only a few weeks longer than it is, their present stride would surely carry them into first place to stay.

It has been a great season. There has been no strife in the League to make conditions unsatisfactory. Every team has gone into its games with the proper ideas of sportsmanship, and the games have been decided on their merits, aided and abetted by the hope and despair of gamblers—luck. It can not be doubted that the friendly feelings engendered by carrying through a schedule such as this have a splendid effect for all concerned. There is no doubt that the League will continue its operations next year, broadening out so as to include more members and produce even better results.

At the ripping pace the Duntleys are now traveling, a post-season jaunt to the Detroit or Cleveland Plant seems assured.

Security Wanted.

Mr. Ball met a man whom he knew one morning on his way to the office, and the man asked for a loan.

"Suppose I decide," said Mr. Ball, "to let you have the money, how do I know that I shall get it back at the time you mention?"

"I promise it," replied the man, "on the word of a gentleman."

"Well," replied Mr. Ball, "in that case I may conclude to do it. Come around to my house this evening and bring him with you."—Exchange.

DRY, glazed, stiff and cracking. These four words describe the average condition of most belts after they have seen even limited service. The fault is not with the belt, not with its manufacturer. A logical reason explains why *good* belts will undergo this dry decay. The process of tanning, of working the minute fibres of the hide into leather, completely removes its natural oils and greases. When in service these leather fibres should be re-supplied with a lubricant which approximates the original ones removed. Such a lubricant is



SOLDCO

SOLDCO is a scientific preparation. It lubricates, as nature originally did, each fibre surface, making its movement upon its neighbors free, even, non-tearing and frictionless. It is in fact a *natural* leather food and conditioner.

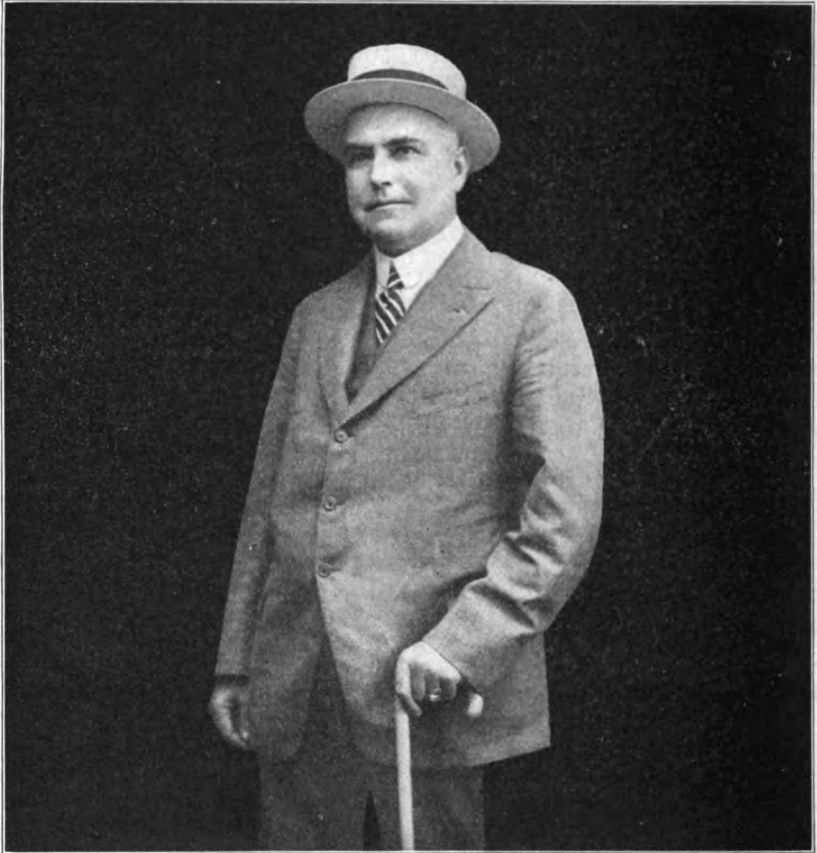
SOLDCO is not a dressing, does not produce a polish or finish. It is free from all acids, chemicals or injurious ingredients of any description. Furthermore, it is non-volatile, non-inflammable, non-combustible and keeps its natural liquid state under all atmospheric conditions.

Users of SOLDCO are innumerable. They are found in widely diversified fields—anywhere that leather is in use.

WRITE You should know all about SOLDCO, because of what it means as an efficient champion of the longest life and best service leather can give. We will gladly forward complete information if you will but request it. Also write for prices. Do it now.

THE DUNTLEY COMPANY

FISHER BUILDING, CHICAGO
295 FIFTH AVENUE, NEW YORK CITY



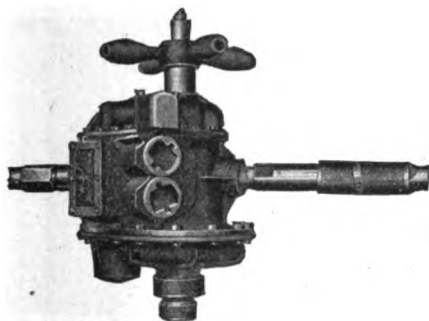
C. E. WALKER,
Manager Railroad Department, Chicago Pneumatic Tool Co.

C. E. (familiarily known as "Charley") Walker, manager of the Railroad Department of the Chicago Pneumatic Tool Co., is a railroad man from the word "Go," having been engaged in railroad-ing in some capacity since he was a kid. It was with the National Locomotive Works, Connellsville, Pa., that he struck his first real job, working in various capacities in the mechanical department, until in 1883, when he accepted the position of roundhouse foreman with the C. H. & D., at Cincinnati. Two years later he became general foreman for the Cincinnati Southern at Ludlow, Ky., a position he occupied for three years. In

1888 he became locomotive engineer on the C. N. O. & T. P., but returned in the following year to the C. H. & D. as general foreman at Lima, Ohio. He was soon promoted to the office of master mechanic at Cincinnati, a position he filled until 1892, when he was appointed superintendent of motive power of the T., St. L. & W. at Frankfort, Indiana.

In 1895 he went with the B. & O. Southwestern as master mechanic at Washington, Ind., where he remained until 1899, when he accepted the Chicago Pneumatic Tool Company's offer to take charge of the St. Louis office. Two years later he removed to Chicago, taking up duties as manager of the railroad de-

DRILL WITH AIR



the long life and the economical upkeep and air consumption for which these machines are famous.

Send for Bulletin 127

Chicago Pneumatic Tool Co.

1014 Fisher Building, Chicago

52 Vanderbilt Ave., New York City

BRANCHES EVERYWHERE

USE Little Giant Ball Bearing Drills for Drilling, Reaming, Flue Rolling, Tapping, Wood Boring, Etc.

The Ball Bearings

The increased port areas

The directness of port passages

The increased diameter of thrust bearings

The hand holes in cylinders, and

The method of bolting the bonnets and gear cases to the cylinders are features of Little Giant Drills resulting in the high power,

partment, a position he has filled ever since.

Charley Walker has an unusually wide acquaintance among railroad men and in the railway supply field generally, and such of our readers who have had the pleasure of meeting him will recognize him from the excellent likeness we reproduce above.

The farm hands were taking turns at the pump for their morning wash. All scrubbed off except the new man.

"Joe," said the boss, "aren't you going to wash up this morning?"

"Shucks!" was the reply, "It don't make me dirty to sleep."

Kid—How did you get the red marks on your nose, Uncle?

Uncle—Glasses, my boy.

Kid—Glasses of what?

Nervous Passenger—My! Oh my! Isn't the train going at a fearful rate?

Old Lady (consolingly)—Yes, deedy. My boy Jimmie is engineer on this train, and he certainly can make her spin when he gets a drop too much in him.

Proof.

It was the rush hour in the cafeteria, one of those quick lunch places where you help yourself and grab a chair and use the arm of the chair as a table. A rushed feeder grabbed a slice of pie and copped out a chair. Then he remembered that he needed coffee, and he dashed over to the service counter. When he returned with his coffee his chair was occupied by another hurryup diner.

"Excuse me," said the first man, "but that is my chair."

"How do you know it is your chair?" demanded the occupant in a surly tone.

"Because I can prove it," stated the first man.

"How can you prove it," asked the occupant.

"By the seat of your pants," was the reply. "Your are sitting on my pie."—Exchange.

"Here, cabby; you haven't given me enough change."

"Well, Mister, ye can't expect to hire a hoss an' kerridge an' a expert accountant for fifty cents a mile."



The Boyer Pedestal Riveter.

The Boyer Pedestal Riveter is designed for riveting small light parts that can best be handled in a stationary machine, and is constructed so that the machine can be operated by a foot lever, leaving the operator's hands free to handle the work.

The yoke consists of a crucible steel frame mounted in the end of pipe column, all of which is supported on a cast iron base and held together with a $\frac{3}{4}$ " bolt in a substantial manner. The base is provided with anchor bolt holes to permit its being securely fastened to the floor. The standard yoke has a gap of 8" and a reach of 11". At a slight additional cost yokes may be furnished of any desired dimensions to accommodate larger work.

Where it is desirable to handle more than one size rivet a special dolly may be supplied that will accommodate four

different size rivets. This dolly is made to permit of its being used in very close corners, and it can be replaced at very reasonable cost when worn out.

The riveter head is a standard Boyer riveter $1\frac{1}{2} \times 3$, $1\frac{1}{2} \times 4$ or $1\frac{1}{2} \times 5$ and is held in a clamp which permits of its being adjusted to take care of the wear on the dies or the variation in length of rivets.

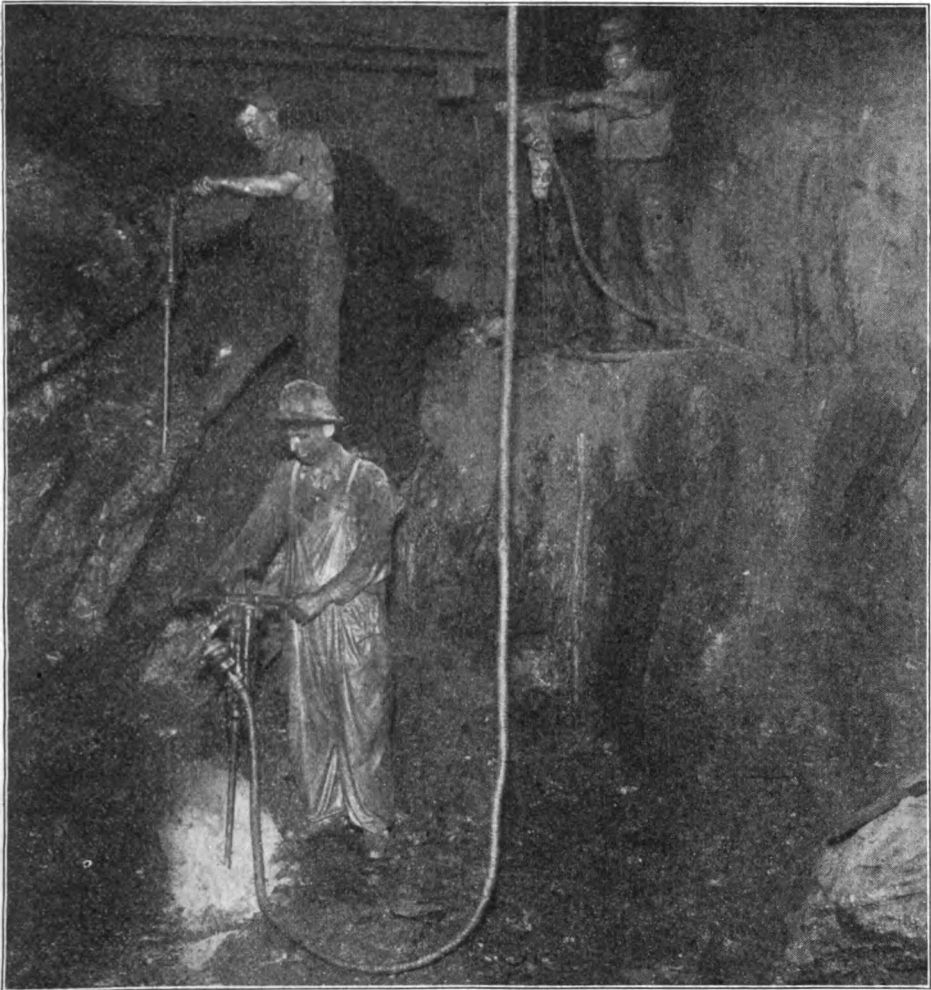
The net weight of this machine when equipped with $1\frac{1}{2} \times 3$ riveter is approximately 173 pounds.

Prices and further information upon request.

Remarkable Drilling Records.

Some interesting tests of Hummer Drills were made a few days ago in the igneous mica rock which is being excavated at the corner of East 149th Street and Eagle Avenue in the Bronx, New York.

The first test was made with a Type A 66 Little Hummer, using $\frac{7}{8}$ in. hexagonal



The U. S. Realty and Improvement Co. is using B-66 Hummer Drills in the New York Subway. The above scene shows three of them in use underground at 32nd St. and Broadway.

hollow steel, collared drill, with the following result:

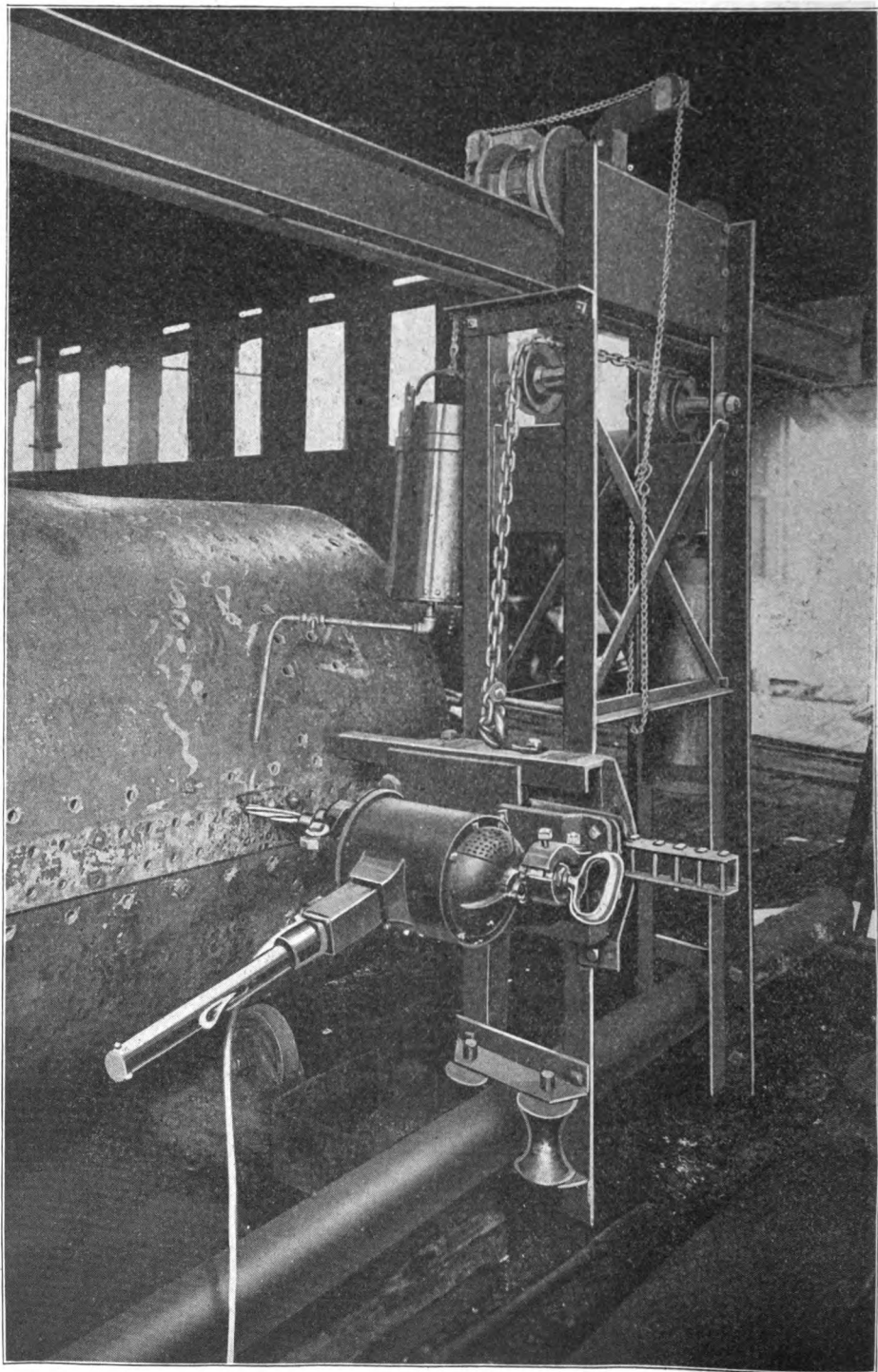
- 20-inch hole, in 2 minutes 7 seconds;
Starter, 1 3/4 in.
- 16-inch hole, in 1 minute 30 seconds;
second drill, 1 1/2 in.
- Total—36-inch hole, 3 minutes 37 seconds.

The second test was made with a Type C 66 Big Hummer, using 1 1/2 hexagon hollow steel, collarless drill, with the following result:

	Length of Drill	Kind of Bit	Depth Drilled	Time Occ'd.
Starter ...	2'6"	*2 1/4"	24"	2'10"
Second ...	4'6"	†2"	26"	2'15"
Third	7'	†1 1/2"	34"	3'10"
Fourth ...	10'	†1 3/4"	36"	4'
Total—120 in.....				11 min. 35 sec.

If you are interested in Hummer Drills, send for Bulletin 216 and ask for quotations.

*Rose.
†Cross.

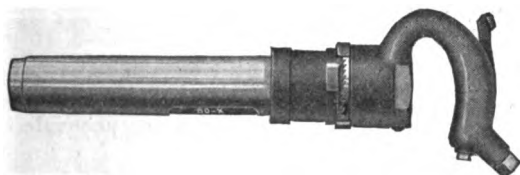


Device for Reaming Holes in Boiler Shells with Duntley Electric Drill.

LOGICAL CONSTRUCTION

Is a Feature of

Boyer Pneumatic Hammers



No. 80X BOYER RIVETING HAMMER
Capacity, 1½ in. Length over all, only 21½ in.

BOYER HAMMERS
are made in three parts—cylinder, handle and valve—a construction which facilitates examination, cleaning and repairs, and extends the life of the tool indefinitely.

Write for Hammer Bulletin No. 124

Chicago Pneumatic Tool Company

1014 Fisher Building, Chicago 52 Vanderbilt Ave., New York City
BRANCHES EVERYWHERE

A Device for Reaming Holes in Boiler Shells.

Reaming holes in boiler shells with the ordinary air or electric drill is a very tiresome operation; it is also very hard to hold the reamer squarely against the shell. When the men doing the work get tired they generally let the drill drop down making the holes oblong.

Mr. E. A. Anderson, superintendent of the boiler department of Kroeschell Bros. of Chicago, has designed a simple frame for holding air or electric drills rigidly in the proper position for reaming, and is using a No. 4 Duntley electric drill which has proven to be the best tool for the purpose. Most of the reaming is from 11/16 to 15/16 in. dia. and about 1½ in. thickness.

As may be seen from the photo the frame holding the motor can be adjusted to different angles and can also be moved up and down, a counterweight balancing the weight of the motor. It is made high enough to take in shells from 30" to 96" in dia. and long enough to take in

a seam 10 feet long without moving the shell.

It is also provided with a tank for holding soapwater and a pan below for catching same so it can be used over again.

The frame is made rigid enough so it can be used as a drill-press. A screw-feed is then put on instead of the lever feed that is used when reaming. It can be put up between two posts almost anywhere in a shop and if necessary can be moved with very little trouble.

Those interested in electric tools should get these bulletins, which may be obtained upon request at any of the offices of the Chicago Pneumatic Tool Co.:

E-31—Duntley Electric Drilling Stands.

E-33—Heavy Duty Electric Drills, Direct Current.

E-35—Duntley Universal Electric Drills.

E-38—Duntley Electric Hammer Drill.

E-39—Duntley Electric Grinders.

E-40—Electric Hoists.

E-41—Duntley Track Drills.



Envy is an awkward homage that inferiority pays to merit.

Some men make the best time when headed the wrong way.

Always try to keep your heart a little softer than your head.

Yesterday has passed, tomorrow may never come; act today.

That which is done in a second is often regretted for a lifetime.

If we got everything we wanted we wouldn't want half so much.

Tomorrow is the soft bed of ease on which the weak lie down to rest.

Did you ever observe how the self-made man worships his creator?

Even the devil don't put off until tomorrow the things he can do today.

Having the key to success is of very little use unless you can find the key hole.

The good work you did yesterday is only a sample of that which you can do today.

It is not very exciting for a girl to marry the fellow none of the other girls wanted.

One way to make a woman happy is to sit and listen to her talk herself into a trance.

A great many people spend their time talking and call it a fighting principle.

Second thoughts are also best, because they are usually the least expensive.

Lots of people hand themselves bouquets who would never get them otherwise.

When a woman loses her husband's love some other woman generally finds it.

Opportunity does not only do great work, but if not heeded is often disastrous.

If the earth were covered with flowers all the year round the bees would get lazy.

Did you ever notice how things that are none of your business will interest you?

Education will broaden a narrow man, but there is no known cure for a big head.

When a fellow "takes the starch out" of his girl she generally wilts in his arms.

Success is made not by lying awake at night, but by keeping wide awake in the daytime.

When mean things are said about you, if they are true, amend; if they are not true, it is not a bad idea to amend a little, anyway.

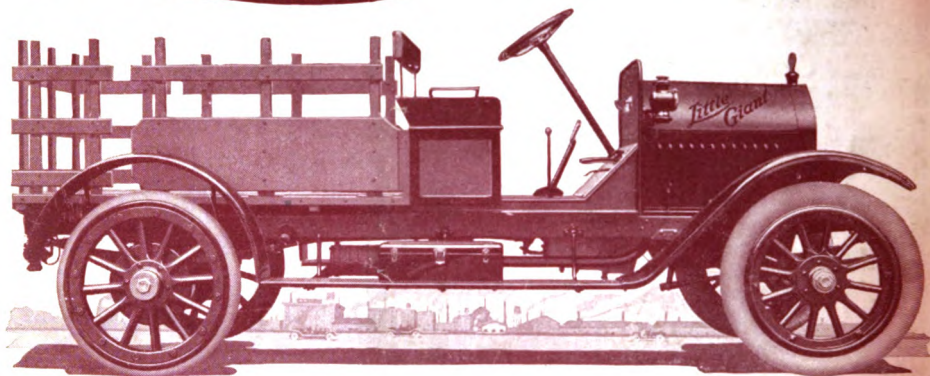
The Chicago Pneumatic Tool Co.

MANUFACTURERS OF THE FOLLOWING

PNEUMATIC TOOLS, APPLIANCES, ETC.

After Coolers	Grinders, Portable Electric
Air Compressors	Hammer Drills, Electric
Air Economizers	Hammer Drills, Pneumatic
Air Forge, Chicago	Hammers, Riveting
Air Motors	Hammers, Chipping and
Air Receivers	Calking
Air Jacks	Hammers, Stone
Air Lifts	Hoists, Duntley Electric
Airoilene Oil	Hoists, Pneumatic Geared
Airoilene Grease	Hoists, Straight Lift
Angle Gears, Little Giant	Holders-on
Angle Gears, Boyer	Hose, Special High Grade
Annealing Machines	Hose Clamp Tool
Armour Scaling Machines	Hose Couplings (Univ'sal)
Automatic Oiling Devices	Inter-Coolers
Bell Ringers, Little Giant	Oil Driven Compressors
Blow-off Cocks, Little Giant	Oil Engines
Chucks, Drill	Painting Machines
Chucks, Expanding	Pipe Bending Machines
Commercial Car	Pneumatic Saws
Drift Bolt Drivers	Pneumatic Plate Stra't'ners
Drills, Boyer	Railway Motor Section Cars
Drills, Keller	Reamers
Drills, Little Giant	Reheaters
Drills, Rock	Rivet Busters
Drilling Stands	Riveters, Jamb
Elevators	Riveters, Yoke
Electric Drills, Duntley	Riveters, Compression
Electric Grinders, Duntley	Sand Rammers
Engineers' Valves	Sand Sifters
Flue Cutters, Chicago	Speed Recorders
Flue Rollers and Ex-	Staybolt Chucks
panders, Little Giant	Stone Dressers
Gas Engines	Staybolt Nippers
Gasoline Driven Com-	Vacuum Pumps
pressors	Water Lifts
Gasoline Engines	Winches, Portable

"Little Giant"



A Whale of a 1-ton Truck

Chicago Pneumatic Tool Company's Master Product

The "Little Giant" Line Includes

Model 15—1-Ton Worm Drive
Model H—1½-Ton Chain Drive

Model H—1-Ton Chain Drive
Model 16—2-Ton Worm Drive

THE LITTLE GIANT stands supreme not merely because part by part it represents units that have proved most enduring in the test of time, but because of individuality—genuine distinction—perfect unity of every factor that makes for truck supremacy.

Our business reputation is at stake on Little Giant Service. We stand back of Little Giant because we know what it will do for your business, whether your loads are heavy or light—your hauling distance long or short. Let us put the facts before you and give you a satisfying demonstration of Little Giant quality and Little Giant service.

Chicago Pneumatic Tool Co.

LITTLE GIANT BUILDING, 1615 MICHIGAN AVENUE, CHICAGO

1917.
NEW YORK
PUBLIC LIBRARY
ASTOR, LENOX AND
TILDEN FOUNDATIONS.

Tech.

123

IDEAL POWER



JANUARY, 1917

A MONTHLY MAGAZINE
PUBLISHED BY THE
**CHICAGO PNEUMATIC
TOOL CO.** CHICAGO NEW YORK

Chicago Pneumatic Tool Company

General Offices, Fisher Bldg.
CHICAGO

Eastern Office, No. 52 Vanderbilt Ave.
NEW YORK

BRANCH OFFICES

BOSTON: 185 Pleasant Street	LOS ANGELES: 925 Title Insurance Bldg.
BIRMINGHAM: 831 Brown-Mary Bldg.	MILWAUKEE, WIS.: 1310 Majestic Bldg.
BUFFALO: 503 Edicott Square Bldg.	NEW ORLEANS: 513 Carondelet St.
CINCINNATI: 1008 Mercantile Lib. Bldg.	OMAHA: 1023 W. O. W. Bldg.
CLEVELAND: 1211 E. 19th St.	PHILADELPHIA: 1740-42 Market St.
CLEVELAND: 2122 Euclid Ave.	PITTSBURGH: 10 and 12 Wood St.
DETROIT: 2nd Ave. and Amsterdam St.	PORTLAND, ORE.: 16-18 Front St.
DULUTH, MINN.: Torrey Bldg.	RICHMOND, VA.: 1001 Mutual Bldg.
EL PASO: 303 San Francisco St.	SALT LAKE CITY: 117-19 W. 2nd So. St.
ERIE, PA.: 12th and Cranberry	SEATTLE: 122 King St.
FRANKLIN, PA.: No. 13th St.	ST. LOUIS: 813-19 Hempstead St.
JOPLIN, MO.: 308 Wall St.	ST. PAUL: Pioneer Bldg.
LOS ANGELES: 211-13 S. Los Angeles St.	SAN FRANCISCO: 71 First St.

FOREIGN

Canada: { Montreal, **Canadian Pneumatic Tool Co.**
The Holden Co., Ltd., Montreal, Toronto, Winnipeg.

British Columbia: Vancouver, Holden Co., Ltd., 542 Pendar Street, West.

Mexico: Mexico City, The General Supply Co., Av. Isabel La Catolica, No. 51.

Northern Mexico: (Sonora and Chihuahua), Don A. Carpenter & Co., El Paso, Texas.

Great Britain: { London, **The Consolidated Pneumatic Tool Company,**
Spain: Ltd., 9, Bridge Street, Westminster, S. W

Portugal: {

France: Paris, Anciens Etablissement, Glaenger & Perreaud, 18-20 Faubourg du Temple.

Belgium: Brussels, The Consolidated Pneumatic Tool Co., Ltd., 22 Chaussée de Forest, Porte de Hal.

Italy: Milan, The Consolidated Pneumatic Tool Co., Ltd., via A. Capellini 7.

Germany: {
Austria Hungary: {
Balkan States: {
Norway: {
Sweden: {
Holland: {
Switzerland: {
Denmark: {
Berlin, **Internationale Pressluft & Elektricitäts-Gesellschaft m. b. H.** Berlin C. 54, Weinmeisterhof, Weinmeisterstrasse No. 14.

Russia: Petrograd; Phoenix Engineering Works Co., Ltd., Polustrovskaya. Quay No. 39.

India: Bombay, **Consolidated Pneumatic Tool Co., Ltd.**, Rampart Row, Fort.

Japanese Empire: Tokyo, Osaka, Seoul, Dairen, The F. W. Horne Co.

Philippine Islands: Manila, Frank L. Strong Mach. Co., 64-68 Calle Echague.

Australia: Sydney, Henry W. Peabody & Co.

New Zealand: Wellington, Henry W. Peabody & Co.

South America: { General Sales Agents, International Railway Supply
Central America: { Co., 149 Broadway, N. Y.

South America: Buenos Aires, Argentina, Evans, Thornton & Co.

South Africa: { Johannesburg, The Consolidated Pneumatic Tool Co., Ltd.,
190 Main Street.

Alaska: Cordova, The Harmon Machinery Co.

Cuba, Havana: J. F. Berndes & Co., Box 349.

Hawaiian Islands, Honolulu: H. S. Gray & Co., 832 Fort St.

BULLETIN DIRECTORY

Requests for these Bulletins should be directed to our Chicago or New York offices or to our nearest branch as shown on inside front cover.

PNEUMATIC TOOLS

- 121...Pneumatic Rammers and Foundry Appliances.
- 124...Pneumatic Riveting, Chipping, Calking and Stone Hammers.
- 125...Pneumatic Yoke, Jam and Shell Riveters, Holders-on, Drift Bolt Drivers, Rivet Busters.
- 127...Pneumatic Drills, Corner Drills, Reamers, Wood Boreers, Flue Rolling and Tapping Machinery and Grinders.
- 128...Miscellaneous equipment for Pneumatic Drills, viz: Chucks, Twist Drills, Reamers, Augers, Flue Cutters, Flue Expanders, Angle Gears.
- 129...Hose, Hose Couplings and Hose Clamp Tools.
- 130...Lubrication of Pneumatic Tools.
- 132...Pneumatic Motors and Pneumatic Geared Hoists.
- 133...Cylinder Air Hoists and Jacks.
- 34-K...Class N-SO and N-SG Fuel Oil and Gas Driven Compressors.
- 34-L...General. Pneumatic Engineering Information.
- 34-M...Class "O" "Chicago Pneumatic" Steam and Power Driven Compressors.
- 34-N...Class N-SS and N-SB Single Enclosed Compressors.
- 34-O...Instructions for the Installation and Care of "Chicago Pneumatic" Gasoline Driven Air Compressors.
- 34-Q...Giant A-O Fuel Oil Engine Applications.
- 34-S...Small Power Driven Compressors.
- 34-U...Instructions for Installing and Operating Class N-SO Fuel Oil Compressors.
- 34-V...Instructions for Installing and Operating Giant Fuel Oil Engines.
- 34-W...Class A-O Fuel Oil Engines.
- 34-X...Class A-G Gas and Gasoline Engines.
- 34-Z...Class N-SS Automatic Steam Driven Compressors.

ELECTRIC TOOLS

- E-39...Duntley Electric Grinders.
- E-41...Duntley Electric Tools for Street and Interurban Railways.
- E-42...Universal Electric Drills.
- E-43...Duntley Universal Electric Hammer Drill.
- E-44...Duntley Electric Sensitive Drilling Stand.
- E-45...Duntley Portable Electric Hoists.
- Booklet:
- 233...Duntley Electric Tools.

AIR COMPRESSORS AND FUEL OIL ENGINES

- 34-A...Class "G" Steam Driven "Chicago Pneumatic" Compressors.
- 34-C..."Chicago Pneumatic" Gasoline and Fuel Oil Engine Driven Compressors.
- 34-F...Design and Construction Class "G" "Chicago Pneumatic" Compressors.
- 34-G...Air Receivers, Aftercoolers, Reheaters, etc.
- 34-H...General Instructions for Installing and Operating "Chicago Pneumatic" Compressors.
- 34-I...Instructions for Installing and Operating N-SS and N-SB Compressors.
- 34-J...Instructions for Installing and Operating Class O Compressors.

- 213...Simplat Flat Disc Valves.
- 224...Compressor Booklet.
- 236...Oil Engine Booklet.

ROCK DRILLS AND HAND DRILLS

- 148...Chicago Valveless Hand Drills.
- 149...Chicago Portable Mine Hoist.
- 150...Chicago Coal Drills.
- 151...Chicago Slogger Rock Drills.
- 152...Chicago Gatling Drills.
- 153...Chicago Sinker.
- 154...Chicago Stoper.
- 172...Chicago Plug and Feather Drill.
- 192...Stone Tools, etc.
- 216...Hummer Hammer Drills.

LITTLE GIANT TRUCK

Catalogue No. 222.

Booklets:

Making Deliveries Deliver Profits.
Deeds of the Little Giant.

ROCKFORD AND MISCELLANEOUS

- 263...Boyer Speed Recorder.
- 266...Rockford Railway Motor Car.
- 117...Lubrication of Rockford Cars.
- 119...Operation of Rockford Cars.
- 251...Baker Air Injector.

CHICAGO PNEUMATIC TOOL COMPANY

1014 Fisher Bldg., CHICAGO

Branches Everywhere

52 Vanderbilt Ave., NEW YORK

CONVENTIONS

January 16-18, 1917—The American Society of Heating & Ventilating Engineers, 29 W. 39th St., New York City.

January 19, 1917—American Society of Engineering Contractors, New York City.

February 5-9, 1917—American Road Builders Association, Boston, Mass.

March 19-22, 1917—National Railway Appliances Association, at the Coliseum, Chicago.

March 20-22, 1917—American Railway Engineering Association, Chicago.

May 1-4, 1917—The Air Brake Association, at Hotel Chicac, Memphis, Tenn.

May 7-11, 1917—American Waterworks Association, at Richmond, Va.

May 14-17, 1917—International Railway Fuel Association, at the Hotel Sherman, Chicago.

May 22-25, 1917—The American Society of Mechanical Engineers, Cincinnati, Ohio.

May 22-25, 1917—Master Boiler Makers' Association, at the Hotel Jefferson, Richmond, Va.

May 22-27, 1917—Boiler Makers Supply Men's Association, at the Hotel Jefferson, Richmond, Va.

June 13-20, 1917—American Railway Master Mechanics' Association, at Young's Million Dollar Pier, Atlantic City, N. J.

June 13-20, 1917—Master Car Builders' Association, at Young's Million Dollar Pier, Atlantic City, N. J.

June 13-20, 1917—Railway Supply Manufacturers' Association, at Young's Million Dollar Pier, Atlantic City, N. J.

August 5-11, 1917—Universal Craftsman Council of Engineers, at Toledo, Ohio.

August 8-10, 1917—The American Association of Railroad Superintendents, Minneapolis, Minn.

August 21-23, 1917—International Railroad Master Blacksmiths' Association, Chicago.

August 30-September 1—American Railway Tool Foremen's Association, at Hotel Sherman, Chicago.

September 4-7, 1917—International Railway General Foremen's Association, at Hotel Sherman, Chicago.

September 10-15, 1917—National Association of Stationary Engineers, Evansville, Ind.

September, 1917—The Traveling Engineers' Association, Chicago, Illinois.

September 10-15, 1917—International Union of Steam & Operating Engineers, Cleveland, Ohio.

September 18-21, 1917—Roadmasters and Maintenance of Way Association of America, at the Hotel Auditorium, Chicago.

October 16-18, 1917—Maintenance of Way Master Painters' Association of United States and Canada, Cleveland, Ohio.

October 16-18, 1917—American Railway Bridge and Building Association, St. Paul, Minn.

ENGINEERING SOCIETIES, ETC.

American Association of Railroad Superintendents (General)—General Secretary, E. H. Harman, St. Louis, Mo.

American Electro-Platers Society—President, H. H. Williams, St. Louis, Mo.; Secretary-Treasurer, Walter Fraine, 507 Grand Avenue, Dayton, Ohio.

American Highway Association, Colorado Bldg., Washington, D. C.

American Institute of Electrical Engineers—President, H. W. Buck, 49 Wall St., New York; Secretary, F. L. Hutchinson, 33 W. 39th St., New York.

American Institute of Mining Engineers—Secretary, Bradley Stoughton, 29 W. 39th St., New York City.

American Mining Congress—Secretary, J. F. Callbreath, Jr., 743 Munsey Bldg., Washington, D. C.

American Order of Steam Engineers—Supreme Chief Engineer, J. W. Parent, Philadelphia, Pa.; Supreme Corresponding Engineer, Edw. A. Reboul, 1110 Earl St., Philadelphia, Pa.

American Railway Engineering Association—Secretary, E. H. Fritch, 1011 Karpen Bldg., Chicago, Ill.

American Road Builders' Association—Secretary, E. L. Powers, 150 Nassau St., New York.

American Society of Civil Engineers—Secre-

tary, Chas. Warren Hunt, 230 W. 57th St., New York City.

American Society of Engineering Contractors (Inc.)—Secretary, J. R. Wemlinger, South Ferry Bldg., New York City. Meetings: Second Thursday, every month.

American Society of Heating and Ventilating Engineers—Secretary, C. W. Obert, 29 W. 39th St., New York City.

American Society of Mechanical Engineers—Secretary, Calvin W. Rice, 29 W. 39th St., New York City.

American Society of Naval Engineers—Secretary-Treasurer, Lieut. A. T. Church, U. S. N., Navy Department, Washington, D. C.

American Water Works Association—Secretary, J. M. Diven, 47 State St., Troy, N. Y.

Association of Civil Engineers, Cornell University—President, A. F. Williams, Ithaca, N. Y.; Secretary, A. S. Patrick, Ithaca, N. Y.

Association of Railway Electrical Engineers—Secretary, J. A. Andreucetti, C. & N. W. Ry. Co., Chicago, Ill.

Boston Society of Civil Engineers—Secretary, S. Everett Tinkham, 715 Tremont Temple, Boston, Mass.

Canadian Society of Civil Engineers—Secretary, Clement H. McLeod, 176 Mansfield St., Montreal, Can.

Canadian Railway Club—Secretary, James Powell, Grand Trunk Ry., Montreal, Que.

Central Railway Club—Secretary, H. D. Vought, 95 Liberty St., New York.

Civil Engineers' Society of St. Paul—Secretary, Edw. J. Dugan, Room 7, Old State Capitol Bldg., St. Paul, Minn.

Cleveland Engineering Society—Secretary, C. E. Drayer, Chamber of Commerce Bldg., Cleveland, Ohio.

Connecticut Society of Civil Engineers—President, Clarence Blakeslee, New Haven, Conn.; Secretary-Treasurer, J. Frederick Jackson, Box 1304, New Haven, Conn.

Detroit Engineering Society—Secretary-Treasurer, B. V. Williamson, 1800 David Whitney Bldg., Detroit, Mich.

Engineering Association of the South—Secretary-Treasurer, W. Harwell Allen, 928 Stahlman Bldg., Nashville, Tenn.

Engineers' Club of Cincinnati—Secretary, E. A. Gast, P. O. Box 323, Cincinnati, Ohio.

Engineers' Club of Minneapolis—President, L. S. Gillette, 74 Chamber of Commerce, Minneapolis, Minn.; Secretary, Louis Clousing, 2411 Oakland Ave., Minneapolis.

Engineers' Club of Philadelphia—Secretary, R. H. Fernald, 1317 Spruce St., Philadelphia, Pa.

Engineers' Club of St. Louis—Secretary, W. W. Horner, 5203 Maple Ave., St. Louis, Mo.

Engineering Society of Purdue University, Lafayette, Ind.—Secretary, C. B. Penrod, 123 State St., W. Lafayette, Ind.

Engineering Society of Buffalo—President, John Younger; Secretary, W. J. Gamble, 247 Rano St.

Engineers' Society of Pennsylvania—Secretary, E. R. Dasher, 31 S. Front St., Harrisburg, Pa.

Engineers' Society of Northeastern Pennsylvania—Secretary, T. F. McKenna, care of Engineers' Club, Scranton, Pa.

Engineers' Society of Western Pennsylvania—Secretary, Elmer K. Hiles, 2511 Oliver Bldg., Pittsburgh, Pa.

Illinois Society of Engineers—Secretary, E. E. R. Treatman, Wheaton, Ill.

Indiana Engineering Society—Secretary, Chas. Broessmann, Indianapolis, Ind.

International Railway Congress Association—President (of the International Commission), W. Toudeller, 11 Rue de Louvain, Brussels, Belgium; Secretary, General L. Weissenbruch, same address.

Iowa Engineering Society—Secretary-Treasurer, Prof. J. H. Dunlap, Iowa City, Iowa.

Lake Superior Mining Institute—Secretary, A. J. Yungbluth, Ishpeming, Mich.

Louisiana Engineering Society—President, Samuel Young; Secretary, W. T. Hogg, P. O. Sta. 20, New Orleans, La.

Michigan Engineering Society—President, Geo. W. Bissell, East Lansing, Mich.; Secretary, Samuel J. Hoexter, Kalamazoo, Mich.

Montana Society of Engineers—President, Martin H. Gerry, Jr., Helena, Mont.; Secretary, Clinton H. Moore, Butte, Mont.

New England Association of Commercial Engineers—President, F. S. Eggleston, Jr., 53 Devonshire St.; Secretary, Jas. F. Morgan, 53 Devonshire St., Boston, Mass.

New England R. R. Club—Secretary, W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass.

New York Railroad Club—Secretary, Harry D. Vought, 95 Liberty St., New York, N. Y.

Ohio Engineering Society—President, Clyde T. Morris, O. S. V., Columbus, Ohio; Secretary, Jno. Laylin, Norwalk, Ohio.

Ohio Society of Mechanical, Electrical and Steam Engineers—Secretary-Treasurer, Frank E. Sanborn, Ohio State University, Columbus, Ohio.

Railway Club of Pittsburgh—Secretary, J. B. Anderson, Room 207, Penn. R. R. Station, Pittsburgh, Pa.

Richmond Railroad Club—Secretary, F. O. Robinson, C. & O. Railway, Richmond, Va.

Rochester Engineering Society—Secretary-Treasurer, F. C. Taylor, 34 Clinton Ave. North, Rochester, N. Y.

St. Louis Railway Club—Secretary, B. W. Frauenthal, Union Station, St. Louis, Mo.

Southern & Southwestern Railway Club—Secretary, A. J. Merrill, Grant Bldg., Atlanta, Ga.

Toledo Society of Engineers—President, L. M. Gram, 1047 Spitzer Bldg., Toledo, O.; Secretary, L. T. Owen, 1047 Spitzer Bldg., Toledo, O. Regular meeting, second Friday in each month.

Utah Society of Engineers—Secretary, Hugh C. Ellis, Capitol Bldg., Salt Lake City, Utah. Third Wednesday of each month, except July and August.

Vermont Society of Engineers—Secretary, Geo. A. Reed, Montpelier, Vt.

Western Railway Club—Secretary, J. W. Taylor, 1112 Karpen Bldg., Chicago, Ill.

Western Society of Engineers—President, B. E. Grant, 207 City Hall, Chicago; Secretary, E. N. Layfield, 1735 Monadnock Bldg., Chicago.

MECHANICAL AND TRADE SOCIETIES.

Air Brake Association—Secretary, F. M. Nelsons, 3014, 165 Broadway, New York, N. Y.

American Boiler Manufacturers' Association—President, M. H. Broderick, Muncie, Ind.; Secretary, H. N. Covell, Lidgerwood Mfg. Co., Dikeman St., Brooklyn, N. Y.

American Electric Railway Association—Secretary-Treasurer, E. B. Burritt, 8 W. 40th St., New York City.

American Electric Railway Manufacturers' Association—Secretary, Fred C. J. Dell, 165 Broadway, New York City.

American Foundrymen's Association—Secretary, A. O. Backert, 12th and Chestnut Sts., Cleveland, Ohio.

American Institute of Metals—Secretary-Treasurer, W. M. Corse, 106 Morris Ave., Buffalo, N. Y.

American Railway Association—General Secretary, J. E. Fairbanks, 75 Church St., New York City.

American Railway Bridge and Building Association—President, C. E. Smith, 2073 Railway Exchange, St. Louis, Mo.; Secretary-Treasurer, C. A. Lichty, C. & N. W. Ry., Chicago.

American Railway Master Mechanics' Association—President, Wm. Schlafke, G. M. S., Erie R. R., New York, N. Y.; Secretary, J. W. Taylor, Karpen Bldg., Chicago.

American Railway Tool Foremen's Association—Secretary, R. D. Fletcher, Belt Railway of Chicago.

American Road Builders' Association—Secretary, E. L. Powers, 150 Nassau St., New York. Boiler Makers' Supply Men's Association—Secretary, Geo. Slate, The Boiler Maker, 461 Eighth Ave., New York City.

Canadian Association of Stationary Engineers—Secretary, W. A. Crockett, Mount Hamilton, Ont., Can.

Canadian Roadmasters' Association—Secretary, J. M. Mackenzie, West Toronto, Can.

Car Foremen's Association of Chicago—President, A. La Mar, Master Mechanic, Penn. R. R. Chicago, Ill.; Secretary, Aaron Kline, 841 N. Lawler Ave., Chicago.

General Superintendents' Association of Chicago—Secretary, A. M. Hunter, 321 Grand Central Station, Chicago.

International Railroad Master Blacksmiths' Association—Secretary, A. L. Woodworth, C. H. & D. Ry., Lima, Ohio.

International Railway Fuel Association—Secretary-Treasurer, J. G. Crawford, 702 E. 51st St., Chicago.

International Railway General Foremen's Association—Secretary-Treasurer, Wm. Hall, C. & N. W. Ry., 1061 N. Wabash, Winona, Minn.

International Union of Steam and Operating Engineers—President, Milton Snellings; Secretary-Treasurer, James G. Hannahan, 6334 Yale Ave., Chicago.

Master Boiler Makers' Association—President, D. A. Lucas, G. F. B. M., C. B. & Q. R. R., Havelock, Nebr.; Secretary, Harry D. Vought, 95 Liberty St., New York City.

Master Car Builders' Association—President, C. E. Chambers, I. M. P., C. R. R. of N. J., Jersey City, N. J.; Secretary, J. W. Taylor, Karpen Bldg., Chicago, Ill.

Master Car and Locomotive Painters' Association—Secretary, A. P. Dane, B. & M. R. R., Reading, Mass.

Maintenance of Way Master Painters' Association of United States and Canada—Secretary, F. W. Hager, The Denver Road, Ft. Worth, Texas.

National Association of Manufacturers—President, Col. Geo. Pope, Hartford, Conn.; Secretary, Geo. S. Budinot, New York City.

National Association of Stationary Engineers—Secretary, Fred W. Raven, 417 S. Dearborn St., Chicago, Ill.

National Founders' Association—Secretary, J. M. Taylor, Room 842, 29 S. La Salle St., Chicago, Ill.

National Railway Appliances Association—Secretary-Treasurer, C. W. Kelly, 122 S. Michigan Ave., Chicago, Ill.

Purchasing Agents' Association of Pittsburgh—President, E. L. McGrew, Standard Underground Cable Company, Pittsburgh; Secretary, H. E. Harmon, Des Moines Bridge & Iron Works, Pittsburgh.

Railway Equipment Manufacturers' Association—President, F. N. Bard, Barco Brass & Joint Co., Chicago; Secretary, W. E. Brumble, Galena Signal Oil Co., Richmond, Va.

Railway Signal Association—President, C. A. Dunham, Signal Engr., Great Northern Ry., St. Paul, Minn.; Secretary, C. C. Rosenberg, Bethlehem, Pa.

Railway Storekeepers' Association—President, W. A. Summerhays, G. S. K., I. C. R. R., Chicago, Ill.; Secretary, J. P. Murphy, Box C, Collinwood, Ohio.

Railway Supply Manufacturers' Association—Secretary-Treasurer, J. D. Conway, 2136 Oliver Bldg., Pittsburgh, Pa.

Roadmasters' and Maintenance of Way Association—Secretary, P. J. McAndrews, C. & N. W. Ry., Sterling, Ill.

Traveling Engineers' Association—Secretary, W. O. Thompson, care of General Offices, N. Y. C., Cleveland, Ohio.

Universal Craftsmen Council of Engineers—Secretary, Thos. H. Jones, Cherrydale, Alexandria County, Va.

"Daughter," said the father, "your young man, Rawlings, stays until a very late hour. Has not your mother said something to you about this habit of his?"

"Yes, father," replied the daughter sweetly, "Mother says men haven't altered a bit."

No. 106

Economy in High Speed Drilling?

Yes: Providing you use a properly made, uniformly tempered Drill
"CLEVELAND" Drills can always be depended on

The  Twist Drill Co.
CLEVELAND Chicago

NECESSITIES

High Grade Rubber Goods

Fire Hose

Reels, Nozzles

Fire Hose Carts

Rubber Cement

P. & W. Rubber Preservative

Rubber Boots

Leather-Soled Rubber Boots

Leather Belting

Upholsterer's Leather

Leather and Silk Fringes

Vestibule Diaphragms

Gimp

Brass Nails

Leather Head Nails

Signal Flags

Bunting

Linoleum

Cab Cushions

Cab Curtains

Track Jacks

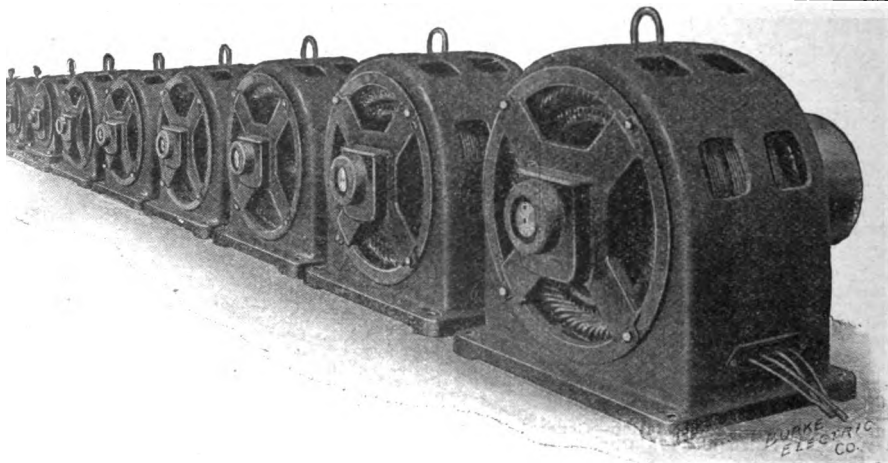
Economy Soap Stock

Nut Locks

GUILFORD S. WOOD

Great Northern Building,

CHICAGO, ILLINOIS.



BURKE ELECTRIC COMPANY, ERIE, PENNA.

SALES OFFICES IN PRINCIPAL CITIES

Motors for all purposes where reliable power is essential

ALL SIZES

ALL SPEEDS

ALL VOLTAGES

2 AND 3 PHASE ALTERNATING AND DIRECT CURRENT

IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances and Motor Trucks
By THE IDEAL POWER PUBLISHING COMPANY
Fisher Building, Chicago

VOL. XII

JANUARY, 1917

No. 3

PISTON STEAM VALVES *vs.* STEAM-TIGHT BALANCED-SLIDE VALVES

In the selection of an air compressor or steam engine, the prospective purchaser should carefully investigate the design and construction of the steam valves used, so as to satisfy himself that he is getting the best obtainable from a standpoint of steam economy.

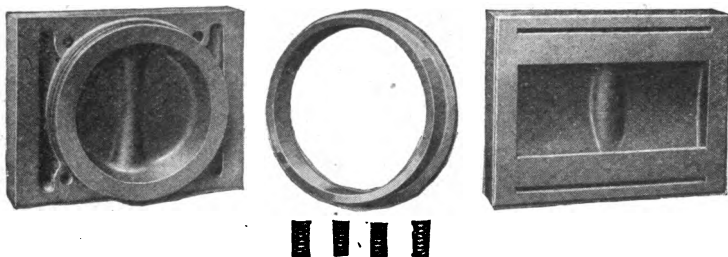
A careful study of this question induced the Chicago Pneumatic Tool Company to adopt the Balanced Slide Valve construction for all of their air compressors and engines.

Some publicity has been given to the Piston Valve construction, but investigation has shown that while piston valves are fairly tight when new, it requires but a few months' service when they become so wasteful of steam that the purchaser cannot afford to operate them, and, of course, the longer they are used the worse they become. Leaky

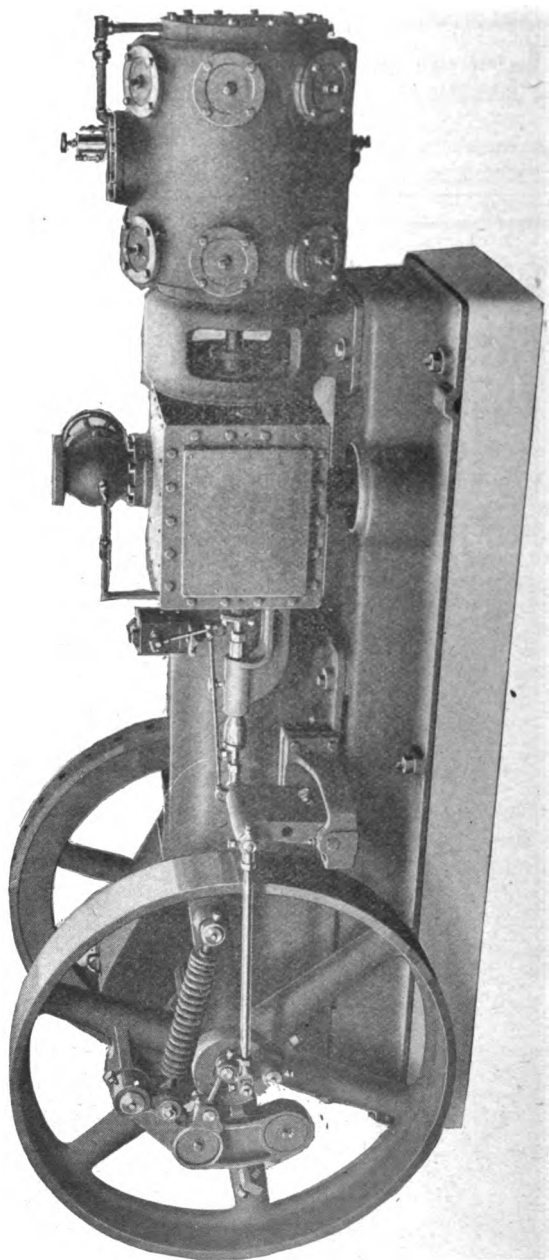
valves are tolerated in America only on account of cheap fuel. In Europe they have long since been almost entirely discarded.

When the question is carefully analyzed, it can be understood that the piston valve is wrong in principle, as it cannot be perfectly fitted to its seat in the beginning, and because of this it must wear itself and the seat to a true surface. It is plain to be seen that during the process of this wear the valve becomes smaller in diameter and the valve chest larger. With the valve becoming smaller and the chest wearing larger, leakage naturally takes place, which leakage increases as the operation continues.

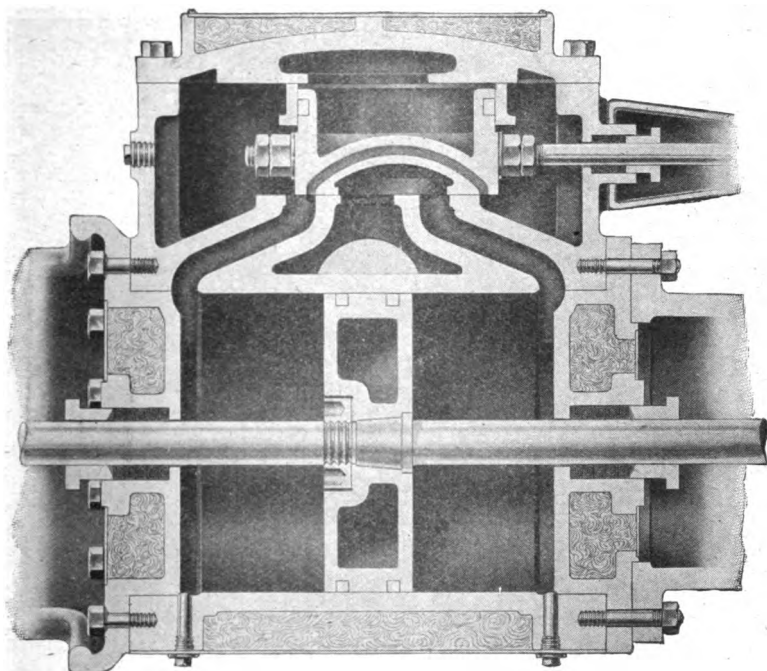
With the Balanced Slide Valve construction the valve surface and seat can be almost perfectly fitted at the time the



Steam Valve Details



**"Chicago Pneumatic" Class N-SS Single Steam Driven Self-Oiling Air Compressor with
Balanced Steam Valve and Automatic Fly Wheel Governor. Ask for
Bulletin 34-Z. It gives full details of this interesting machine.**



Section of Steam Cylinder

valve is made. However, after the heat of the steam is applied, if there is any distortion or warping of the surface, it can easily be scraped to a more perfect bearing or be worn in and the expanding balance ring on top can accommodate for the wear and hence remain tight indefinitely.

A 12x12 engine fitted with a Piston Valve had been in operation less than one year and up to this time it was entirely satisfactory. The owner then finding that he required more power, was persuaded to install a Balanced Slide Valve engine of the same size. The fuel used to make the steam for these engines was crude oil and it soon developed the quantity used was not twice that consumed before, despite the fact that the load had been doubled. This discovery led to a test of each engine, which showed a saving in favor of the Balanced Slide Valve of \$2.59 a day or about \$932.00 per year, equalling a 6% return on a \$15,500.00 investment. After the test the piston valve was removed

and found to be in very good condition in so far as having a good wearing surface and not being cut or destroyed in any way.

Following this discovery another test was made in another section of the country with the following results:

BALANCED-SLIDE VALVE ENGINE.

Size14x13
Percentage of full load..... .62
Lbs. of coal used per H.P. per hour 2.88

PISTON-VALVE ENGINE.

Size11x10
Percentage of full load..... .82
Lbs. of coal used per H.P. per hour 4.66
Saving per year (Cost of coal \$3.15 per ton) \$493.

The records of these tests have been preserved and sworn copies of them, with information as to time and place, can be furnished.

In another instance, the owner having several Piston Valve Engines and hearing of the results above cited, conducted a test and found that the engines con-

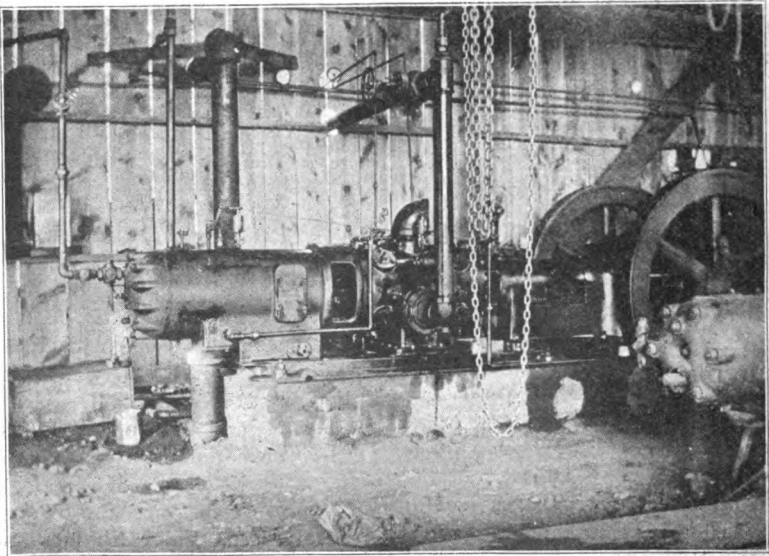


Scenic view of Lincoln Mines, Crown King, Arizona, where "Chicago Pneumatic" Compressors and Giant Fuel Oil Engines are installed.

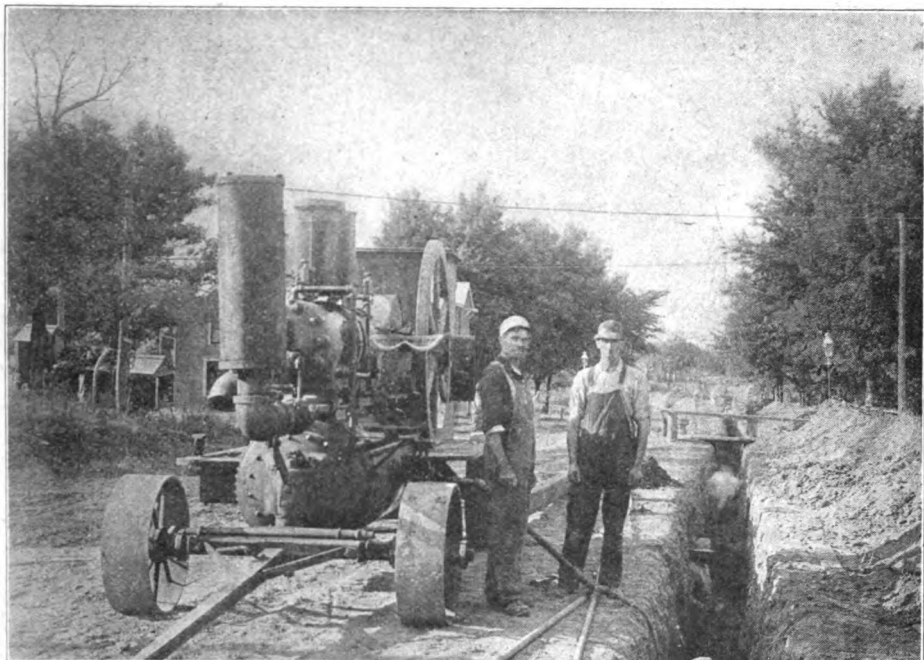
sumed 54 pounds of water per 1 H. P. He immediately threw out three (3) Piston Valve Engines, replacing them with engines having Steam-Tight Valves.

In Germany a test was made on twelve

Locomotives which were fitted with Piston Valves. The test showed that, after one year's operation, there was an average increase in the steam consumption of over 120%.



Scene in Power House of Lincoln Mines, Crown King, Arizona. A 300-foot "Chicago Pneumatic" Fuel Oil Compressor and (at extreme right) twelve-horsepower Giant Fuel Oil Engine.

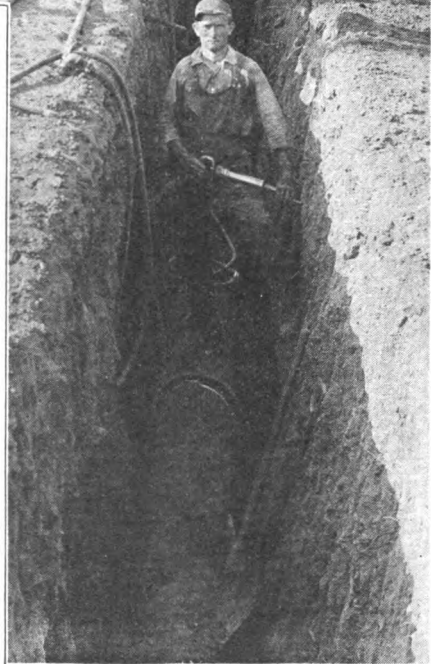


Calking Gas Mains With Chicago Pneumatic Portable Gasoline Compressor Outfit.

Mohammed had to go to the mountain because the mountain would not come to him, and until the day of the "Chicago Pneumatic" Portable Compressor, work intended to be done by compressed air had to be brought within the range of a stationary compressor plant. Makeshift outfits were, of course, resorted to. Stationary compressors were transported in various ways from place to place involving difficulties and expense that barely justified their use.

The "Chicago Pneumatic" Portable Compressor operated by gasoline or fuel oil, is ideal for field work, such as calking gas and water mains, chipping, cutting and splitting stone in excavating and trenching operations, or in construction work where drilling, reaming, riveting and chipping must be done.

The "Chicago Pneumatic" Compressor



shown herewith is in the service of the Minneapolis Gas Light Company.

Operator with Boyer calking hammer in foreground.

FORGED STEEL CONNECTING ROD

**CAREFULLY TURNED
CROSSHEAD**

**EXTRA LARGE
BEARINGS**

**PARTS ACCESSIBLE DUE
TO REMOVABLE CRANK
COVER**

**CORRECTLY DESIGNED
FLY WHEEL FOR SMOOTH
OPERATION**

**WATER JACKETED
CYLINDER HEAD**

**LARGE
WATER JACKETS**

**FUEL
SPRAY
NOZZLE**

**HOT TUBE FOR
STARTING ONLY**

IGNITION PLATE

**AMPLE EXHAUST
OPENING**

**CYLINDER HEAD
LINER**

**CYLINDER CAST FROM
SPECIAL CLOSE GRAINED GRAY
IRON AND STEEL**

**LIBERAL DEPTH
STUFFING BOX**

**HEAVY ENCLOSED
FRAME**

**CROSSHEAD PIN BOX
WITH WEDGE ADJUSTMENT**

**SPLASH SYSTEM
OF LUBRICATION**

**CRANK
COUNTERBALANCED**

**CRANK SHAFT
HAMMERED
FROM SOLID
BILLET OF
OPENHEARTH
STEEL**

THE ARTESIAN WAY OF PUMPING WATER FROM DEEP WELLS

Has Many Advantages

— INSTALL THE — BAKER AIR INJECTOR SYSTEM

¶ No pulling of wells caused by broken sucker rods, cut cylinders, bad check valves, etc.

¶ No trouble from sand or gravel cutting your cylinders and valves and thereby cutting the efficiency.

¶ Water is delivered free from oils, surface water and other impurities.

¶ Well equipment is guaranteed for the life of the pipes in the water.

Let us know your conditions and get our proposition

CHICAGO PNEUMATIC TOOL CO.

1014 Fisher Bldg., Chicago 52 Vanderbilt Ave., N. Y.

Branches Everywhere



Baker Air Injector

Why We Use the Hot Plate In Giant Fuel Oil Engines.

Electric ignition has not been successfully applied to the firing of low grade fuels. Such engines as employ this system are suitable only to burning kerosene and similar high-grade oils. As Giant engines are designed to use the widest possible range of fuels it follows that electric ignition is not feasible for them.

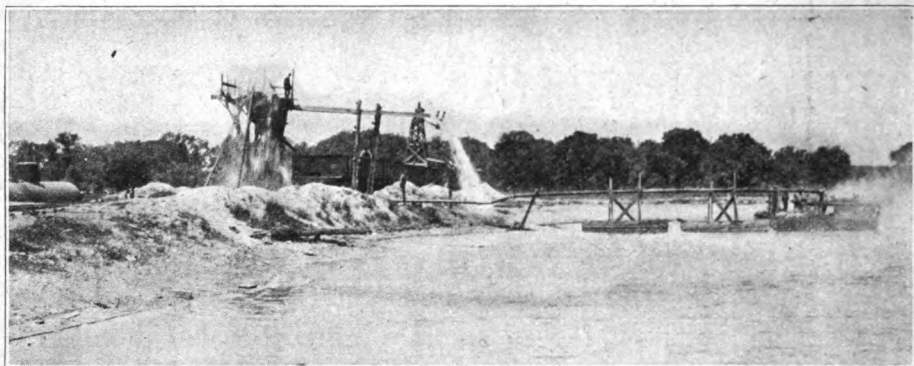
Hot balls fill up with carbon and stop the engine. Hot plates do not. Hot balls burn out quickly and as a result frequently burst. Hot plates are not subjected to any bursting pressure and will not burn out as quickly as the hot ball.

In any engine using hot ball ignition the oil in being injected into the cylinder, comes in contact with very little heated iron as compared with the hot plate method used in the Giant. As a result it takes much longer to gasify the oil and consequently it must be injected into the cylinder much earlier in the

stroke than when using the hot plate and liner. The earlier the oil is injected into the cylinder of an oil engine, the more danger there is of pre-ignition and excessive initial pressures.

In Giant engines, the oil is forced into the cylinder, striking the center of a concave malleable iron hot plate. The shape of this plate is such that the oil is instantly distributed over its surface, gasified and ignited. The rapidity of the ignition enables us to inject the fuel into the cylinder late in the stroke, thereby avoiding the abnormal pressures incident to pre-ignition.

With the proper amount of water going into the cylinder and the engine not loaded above its rated power, the initial pressure in the cylinders of Giant engines is only about 25 pounds more than the compression. This initial pressure is maintained for a considerable distance along the stroke giving a distribution of pressures approaching those obtained in the steam engine. This permits higher compression to be used which increases fuel economy.



Sand pumping plant operated by the Platte Gravel Co. Cedar Creek, Neb.
Giant Fuel Oil Engine furnishes the power.

Giant Fuel Oil Engine Operates Sand Pumping Plant.

Illustrations on this page show the sand pumping plant of the Platte Gravel Company at Cedar Creek, Nebraska, on the Platte River. A 50 H. P. Giant Fuel Oil Engine operates a rotary sand pump, both of which are mounted upon a scow. A suction pipe leads from the sand pump to the bottom of the river from whence the sand is picked up, and carried up through the pump and through a pipe line to the bank of the river, from whence it is carried to the top of a head-frame where the sand, gravel and water are thrown against a screen.

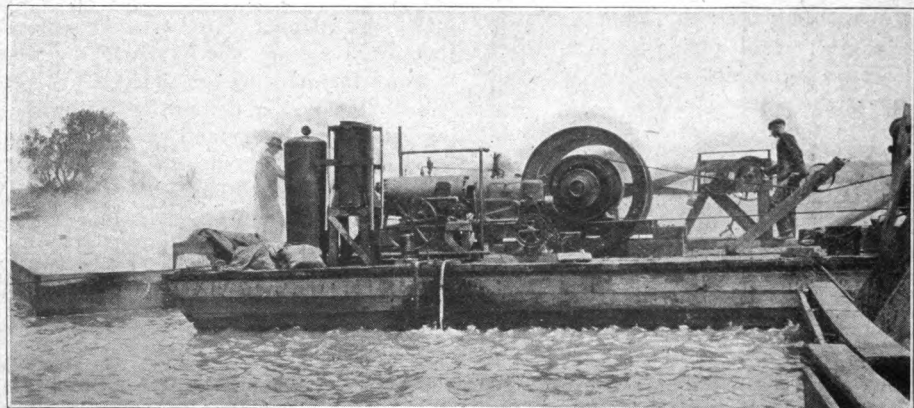
The size of the gravel allowed to pass through with the sand is determined by the size of the screen mesh. Having

passed through the screen, the sand is promptly loaded into railroad cars, the water returning to the river.

The engine has been in operation since the latter part of March, and in continuous operation during the summer season without even a roof placed over it, or any protection whatever from the weather.

The outfit is in operation on an average of fourteen hours per day, is looked after by workmen having no engineering experience and no repairs have been required.

The owners are so well pleased with the performance of the plant that they have practically closed for another Giant Engine—one of 100 H. P., to be mounted upon a larger scow for service during the coming season.



Close up view of Giant Fuel Oil Engine operating sand pump for Platte Gravel Co.

DRY, glazed, stiff and cracking. These four words describe the average condition of most belts after they have seen even limited service. The fault is not with the belt, not with its manufacturer. A logical reason explains why *good* belts will undergo this dry decay. The process of tanning, of working the minute fibres of the hide into leather, completely removes its natural oils and greases. When in service these leather fibres should be re-supplied with a lubricant which approximates the original ones removed. Such a lubricant is



SOLDCO

SOLDCO is a scientific preparation. It lubricates, as nature originally did, each fibre surface, making its movement upon its neighbors free, even, non-tearing and frictionless. It is in fact a *natural* leather food and conditioner.

SOLDCO is not a dressing, does not produce a polish or finish. It is free from all acids, chemicals or injurious ingredients of any description. Furthermore, it is non-volatile, non-inflammable, non-combustible and keeps its natural liquid state under all atmospheric conditions.

Users of SOLDCO are innumerable. They are found in widely diversified fields—anywhere that leather is in use.

WRITE You should know all about SOLDCO, because of what it means as an efficient champion of the longest life and best service leather can give. We will gladly forward complete information if you will but request it. Also write for prices. Do it now.

THE DUNTLEY COMPANY

FISHER BUILDING, CHICAGO
295 FIFTH AVENUE, NEW YORK CITY

IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air
and Electrical Appliances

BY THE
IDEAL POWER PUBLISHING CO.
1014 FISHER BUILDING
CHICAGO, U. S. A.

C. I. HENRIKSON Editor

Vol. XII. JANUARY, 1917 No. 3

TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year
Other Countries in Postal Union, 50 cents per year

ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our
subscription list.

Pneumatic Tool Man Honored.

At the last meeting of the New England Association of Engineers, Mr. F. S. Eggleston, Jr., District Manager for the Chicago Pneumatic Tool Co., 185 Pleasant street, Boston, was elected president of the Association. Mr. James F. Morgan was elected secretary.

Situations Wanted.

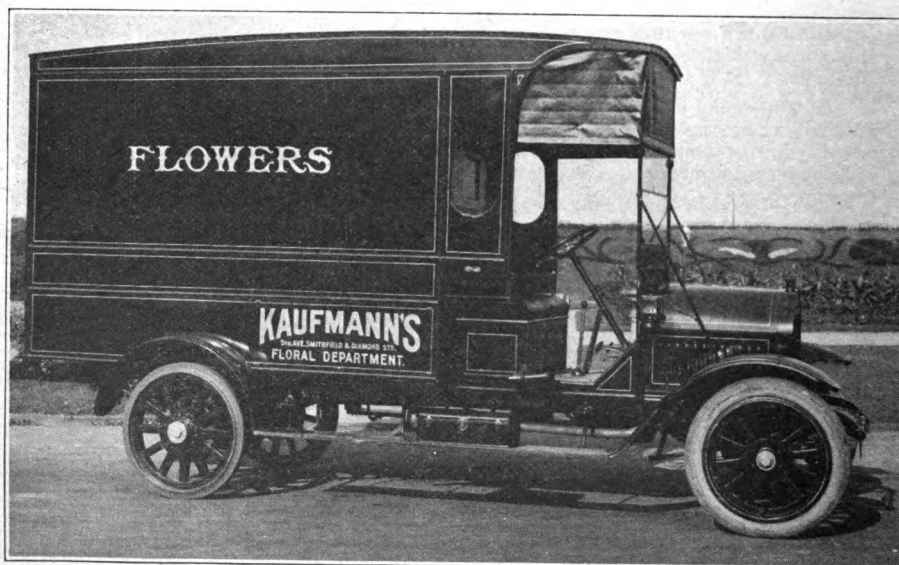
Wanted: Position by man with fifteen years' experience as head of purchas-

ing and accounting departments of railways, locomotive and car works. Highest references. Address Ideal Power Ad. 22.

Wanted: Position as master mechanic or shop superintendent. Thirty-years of age, married, strictly temperate, nineteen years' experience; twelve and one-half years in office capacity with large shops. Can give best of references. Address Ideal Power Ad. 23.

Large Department Store Adopts Little Giant.

Large department stores are careful buyers of motor trucks. They know the cost of delivery to a penny. Only the best class of motor vehicles are considered for this service. This Little Giant is employed by Kaufmann's Department store, Pittsburgh—one of the biggest institutions of its kind in the country. J. Burns, the Little Giant representative located at 117 Negley avenue, says the hills of Pittsburgh are easy for the Little Giant on account of its reserve power and its sturdy construction.



Kaufmann's—Pittsburgh's largest department store—uses Little Giant Trucks



Moving Pictures

Show
you how the

This MODEL H
'Little Giant'
has just been
loaded with coal
at the plant of
F. P. Carroll,
3027 St. Clair
Ave., Cleveland.

All Aboard!
Ready to start
on a six mile
trip.

*"Little
Giant"*



Arriving at destination seven-
teen minutes
later.

delivers a load
of coal.



Dumping body
in action. Thirty
seconds to un-
load.



Total time
dumping load
and relowering
body — one
minute, fifty
seconds.

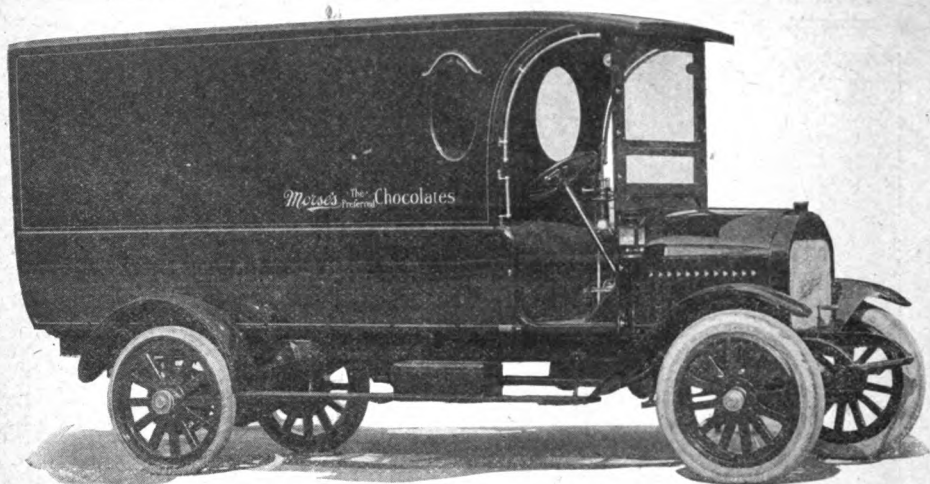
Write for prices
of Little Giants
equipped with
dumping body for
coal, sand, gravel,
etc.

Chicago Pneumatic Tool Co.

1615 Michigan Ave.

CHICAGO

When writing to advertisers please mention Ideal Power.



A bright red body of same striking color as Morse chocolate containers gives this Little Giant unusual advertising value.

Three Times Around the World in 8 Years—and Still Going.

Such would be the endurance record of a Little Giant motor truck, had its mileage been used in globe circling.

Famous, little No. 705 Model C, one of the first solid tire, light gasoline motor trucks put into use in the City of Boston, has now been hauling goods eight years for The Bigelow Furniture Co., of Norwood, Mass., and shows no signs of being pensioned.

In all kinds of weather, over all sorts of roads, this sturdy, willing servant has motored its way into the confidence of its owners, until its mileage record surpasses the hundred thousand mark.

There is no Sunday lay-off granted this Little Giant for, on Sundays, when the hauling of furniture is forgotten, it is pressed into service as a recreation transport, or used as a picnic truck carrying the concern's employes into the country for a day's outing.

This truck was one of the first built by the Chicago Pneumatic Tool Company as an exposition of President Duntley's theory that motor impelled commercial vehicles would shortly become a necessity to meet the demands for increased time saving and the ex-

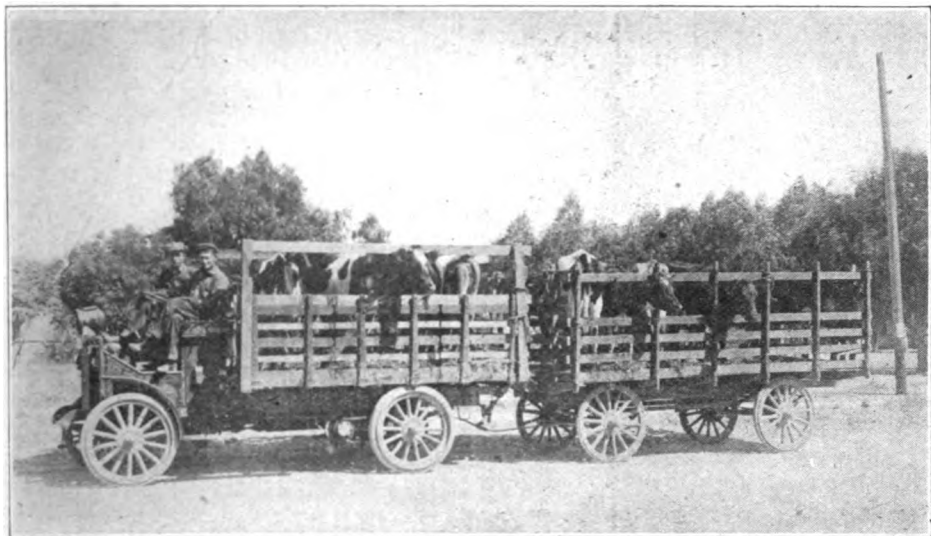
tension of territory over the possibilities of the horse-drawn delivery wagon.

The accuracy of President Duntley's prediction is attested by the frequency with which Little Giant trucks are seen on the streets of even the most remote cities of the world.

UTILIZING MOTOR TRUCKS FOR ADVERTISING.

Attractive Bodies Make the Little Giant Popular.

Although Europe in normal times is far behind America in advertising enterprise, European merchants were first to recognize the splendid value of the motor truck for playing up a slogan or trademark as an advertising medium, or for performing the simpler advertising duty of attracting attention. Many striking motor truck bodies have resulted. A baker will have a body on his motor truck that resembles a loaf of bread or a huge layer cake; the body on a motor truck belonging to a dairy will resemble a huge bottle of milk lying on its side and a meat packer will have his motor truck equipped with a body that resembles a ham or a cow in a kneeling position. The Little Giant organization



Little Giant Truck and trailer hauling fourteen head of cattle.

has been fortunate in securing a body designer who is an artist in his line and who has planned a number of original and artistic bodies for owners of Little Giant trucks. One of his recent jobs is the body for a Little Giant truck sold to A. G. Morse & Co., the well-known chocolate people. This body was specially designed and sets off their trade mark in a happy way by being finished in the same beautiful shade of red as the container of their popular chocolates.

Yes, There Is Something New Under the Sun.

The oxen, slow and easy going, were satisfactory as beasts of burden to the people of their time, but as the world began to move faster, the more rapid animal, the horse, was pressed into service and the oxen relegated to humbler duties. But even the horse, faithful friend and servant to man that he has been for many years, is too slow for men of the twentieth century and is retiring before the swift assaults of the motor truck, man's latest servant.

The accompanying illustration shows clearly the contrast between the old way and the new way. Instead of the

oxen hauling the vehicle, the vehicle is hauling the oxen!

The outfit is a Model "H" Little Giant with a trailer, owned by Mr. Geo. Reid of San Jacinto, Calif., and the two loads consist of nine head of cattle and five calves. The cattle are thoroughbred stock which Mr. Reid is transporting from San Jacinto to Santa Fe Springs, Calif.

The "Little Giant" trailer in the rear is an old Model "C" Little Giant dismantled and reconstructed at the Los Angeles branch. Mr. H. L. Miller, Manager Motor Truck Dept., for Chicago Pneumatic Tool Company at Los Angeles, Calif., states they make excellent trailers, and are capable of hauling two tons easily. The steering device connecting the trailer with the truck, is so designed that in turning corners, it will track with the rear wheels of the truck, so it will follow any road.

The rear wheels of the truck are equipped with oversize tires and extra heavy springs have been installed. Mr. Reid makes the statement he has had no trouble at all in negotiating the load over the roads in California, from eighteen to twenty miles per hour.



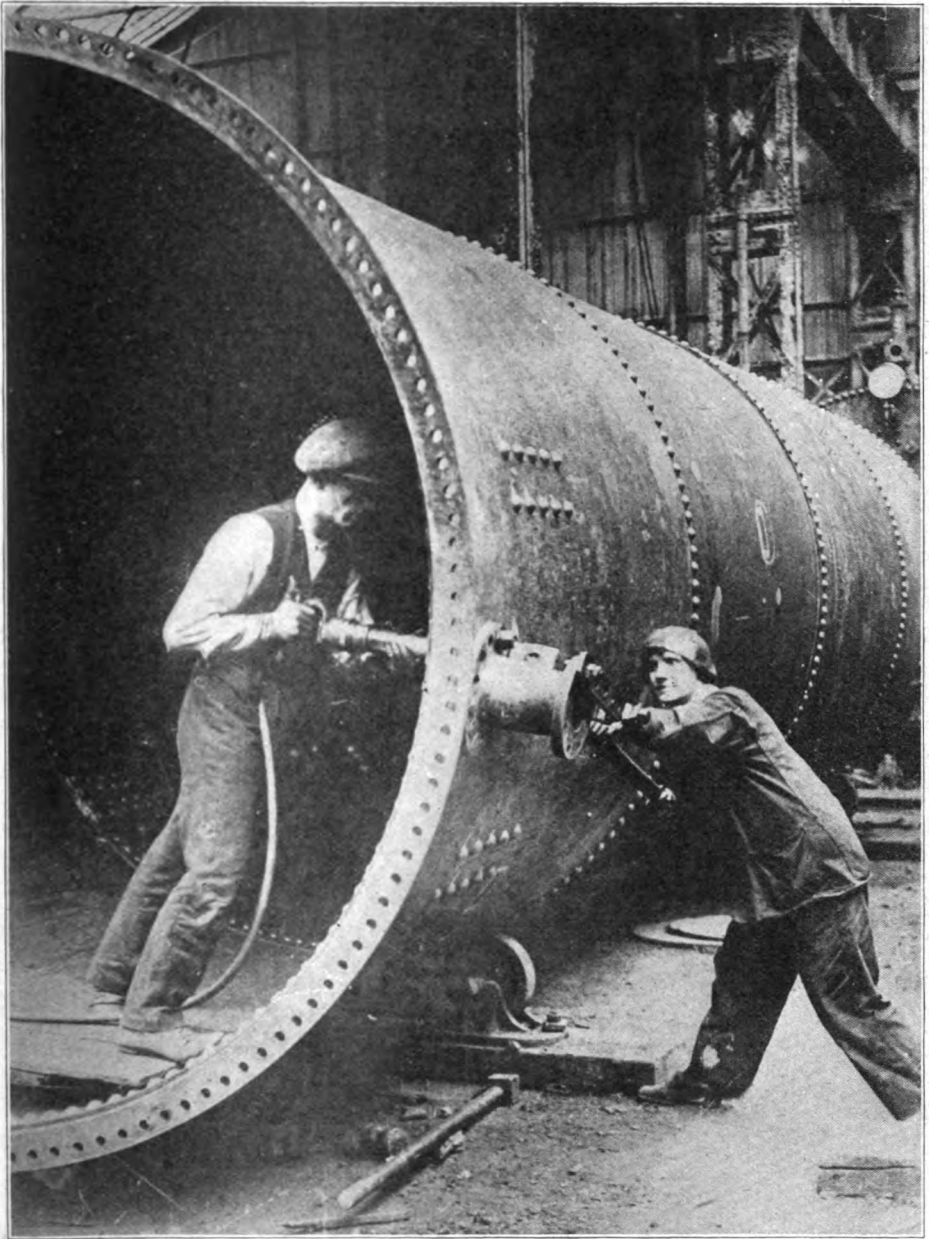
GEORGE A. BARDEN

Manager Philadelphia Branch Chicago Pneumatic Tool Co.

One of the best examples of the smile that don't come off—one that has to be met face to face to be appreciated—is owned by Mr. George A. Barden whose photo we reproduce above.

Mr. Barden is Manager of the Philadelphia office of the Chicago Pneumatic Tool Company. He is one of the "Old

Guard," having been eighteen years in the pneumatic tool business and fifteen years with the company. He is one of the best known men in the railway supply business and has more friends than you or I could shake a stick at. After considerable editorial persuasion he consented to "sit" for this picture provided we would not tell his age, etc.



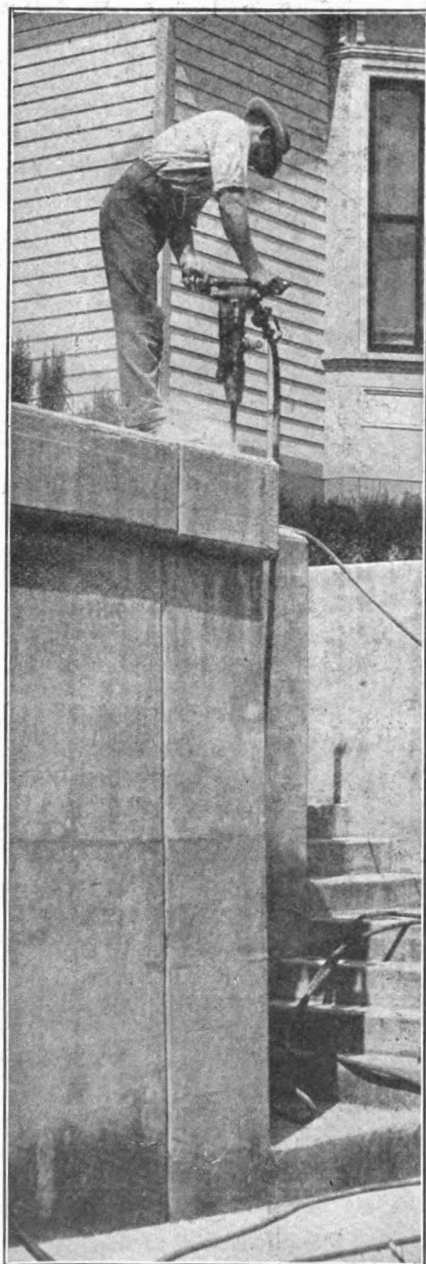
UNDERWOOD

Two Types of Boiler Makers—the Old and the New

As a rule boiler making is not considered a very ladylike occupation, but this plucky woman has thrown tradition to the winds by entering on a career in a boiler factory in Glasgow.

Clad in working togs deserted by a huskier boiler maker when the call to

the colors sent him to the front, she is shown in this picture assisting in the operation of "holding on" or "backing up" the rivet. The riveting gun or hammer used is, of course, the Boyer which is pretty well standardized in the shipyards and boiler shops of Europe.



Chicago Hummer at Work

For
**Smooth,
Steady Operation**

USE THE

**CHICAGO
HUMMER**

ON

Contract Work

Road Building
Trench Work

Quarrying

Bench Work
Block Holing
Breaking Boulders

Metal Mining

Ore Drilling
Shaft Sinking
Drifting

Coal Mining

Coal Drilling
Hitch Cutting
Tunneling

All Details in Bulletin 216. Send For It.

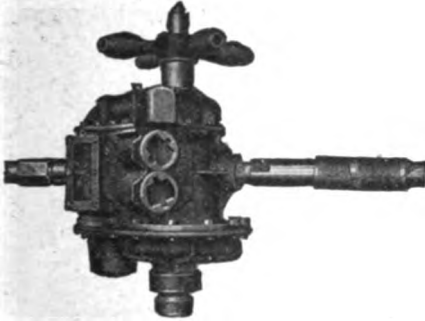
**Chicago Pneumatic Tool
Company**

1014 Fisher Building, Chicago
52 Vanderbilt Ave., New York City

BRANCHES EVERYWHERE

When writing to advertisers please mention Ideal Power.

USE *Little Giant*



BALL Bearing Drills for Drilling, Reaming, Flue Rolling, Tapping, Wood Boring, etc.

The Ball Bearings

The increased port areas

The directness of port passages

The increased diameter of thrust bearings

The hand holes in cylinders, and

The method of bolting the bonnets and gear cases to the cylinders are features of Little Giant Drills resulting in the high power,

the long life and the economical upkeep and air consumption for which these machines are famous.

Send for Bulletin 127

Chicago Pneumatic Tool Co.

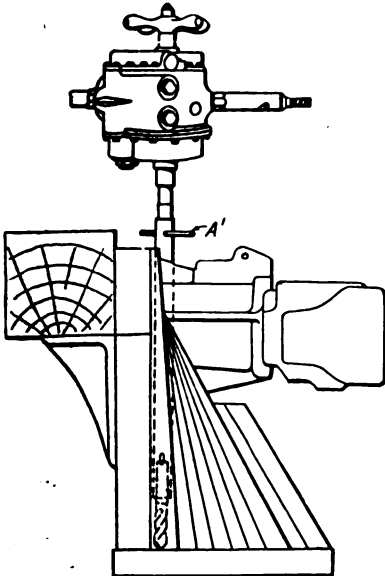
1014 Fisher Building, Chicago

52 Vanderbilt Ave., New York City

BRANCHES EVERYWHERE

The Use of Drill Extensions.

An example of the use of drill extensions is here shown in the drilling of a pilot heel plate. With the aid of these

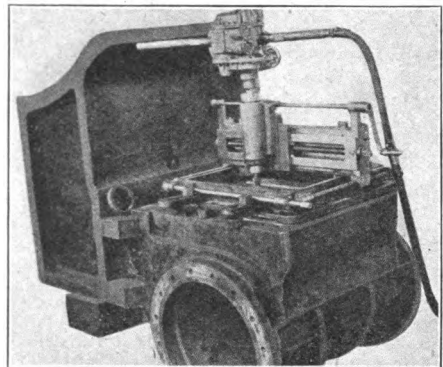


Little Giant Drill with Extension

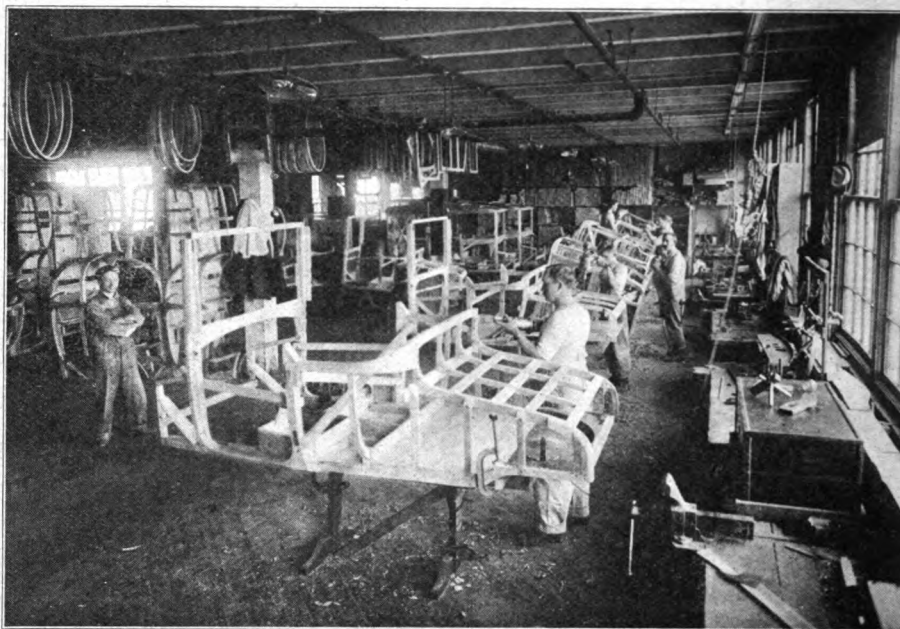
extensions, Little Giant drills may be used for drilling across the frames; all inside fire box drilling; bumper beam plates; drilling running boards in place; staybolts in throat sheets and holes in heels of pilots for pilot braces.

A Novel Valve Seat Port Miller.

An improvised Valve Seat Port Miller, used by the Wabash Railway in their Decatur, Ill., shops.



Little Giant Drill operating
Seat Port Miller



Scene in Plant of Fisher Body Co., Detroit, where about twelve hundred Duntley Electric Drills are in use

The cut of this device shown on page 79 was taken from the Proceedings of the American Railway Tool Foremen's Association, in which Mr. C. T. Brunson, Tool Foreman, says: "We use it for milling steam ports in valve seats and for milling key ways in axles when occasion demands it. The frame of this machine was made from an old steam chest and the balance of the machine from forgings and casting to be had around any locomotive shop. Owing to the large number of cylinders applied to engines at this point this tool has become an absolute necessity."

This device as will be seen is operated by a Little Giant Drill, selected because of its unfailing power and its absolute dependability.

A SHOCKING STYLE

Customer—Are you sure these socks are the correct thing?

Haberdasher—The smartest dressers wear nothing else."

Big Output of Automobile Bodies Due to Duntley Electric Drills.

Above is a scene in the plant of the Fisher Body Co., Detroit, where about twelve hundred Duntley Universal Electric drills are in use. The demand for automobile bodies in Detroit has taxed so the resources of the body builders that it is only with the most efficient time and labor saving devices that good work can be turned out in the quantities required. The view shown is a corner of the establishment devoted to a popular make of coupelet bodies which at the time the photo was taken were being turned out at the rate of several hundred per day. As each man is equipped with a 00 Side Spindle Duntley Universal Electric Drill, the processes of drilling and reaming wood or iron, are reduced to a minimum.

We can't all smoke ten-cent cigars,
Or own a limousine,
But we can all collect the bands,
And smell the gasoline.

SOMEWHAT EMBARRASSING

"I understand about the potato's jacket," began the young housewife.

"Yes?"

"But the onion has so much of it that I hardly know where to stop removing the-er-lingerie," she concluded, with a blush.

SHE'D GIVE A DOLLAR

"What would your mother say, little boy," demanded the passerby virtuously, "if she could hear you swear like that?"

"She'd be tickled to death if she could hear it," answered the bad little boy. "she's stone deaf."

PREPAREDNESS

The minister came to Johnson's house one afternoon to a christening party—he was to christen Johnson's little son, John, Jr.

"Johnson," said the minister solemnly, taking his host aside before the ceremony, "Johnson, are you prepared for this solemn event?"

"Oh, yes, indeed, doctor," Johnson beamed. "I've got two hams, three gallons of ice cream, pickles, cake—"

"No, no, Johnson," said the minister with a smile. "No, no, my friend, I mean spiritually prepared."

"Well, I guess yes! Two demijohns of whiskey and three cases of beer!" Johnson cried in triumph.

POOR JUDGE

Lawyer—Now, madam, please repeat the slanderous remarks you heard the defendant make.

Witness—Oh, they were unfit for any respectable person to hear.

Lawyer (coaxingly)—Then suppose you just whisper them to the judge.

When you see two white shoes drying on a window sill and a girl hanging out of the same window, drying her hair, you can bet she isn't going to eat raw onions for supper.

'T WAS EVER THUS

"Oh, no!" soliloquized Johnny, bitterly; "there ain't any favorites in the family. Oh, no! If I bite my finger nails I get a rap over the knuckles, but if the baby eats his whole foot they think it's cute!"

NO QUESTION ABOUT IT

A child adopted from an orphan's home was being ridiculed by the other children because he had no real parents. The conversation went as follows:

"Aw, you haven't got any real father and mother."

"Maybe I haven't, but the ones I have got love me as much as yours do you," says Life.

"They do not. Ours are real parents."

"Well, mine love me more than yours do you, 'cause mine picked me out of a hundred other babies, and yours had to take what they got," replied the adopted son.

MARY BOBS UP AGAIN

Mary had a little calf,

(With that you say, "don't bore us.") All right. But that's the reason

She can't get in the chorus.

HOW ABOUT IT

"What was Eve made of?"

"God caused a deep sleep to fall upon Adam, and then he took out his backbone and made woman."

O'Brien—Oi can say wan thing—Oi'm a self-made man.

Casey—Is it boastin' ye are, or apolo-gisin'?

The doctor entered the patient's room in the morning, and according to habit, read the chart first thing. He was a little surprised to read:

"Two a. m. Patient very restless, nurse sleeping quietly."



The odds in favor of marriage are two to one.

It's a good thing to have a reputation that isn't bad.

Lady fingers are the prevailing thing in engagement rings.

And some woman haters are floor-walkers in department stores.

An awkward man may not be slow, yet he always wants a day of grace.

But for the occasional happening of the unexpected it would soon cease to be.

When it comes to making payments some people never get beyond complaints.

Gold brick buyers are born often enough to keep the manufacturers from going out of business.

The atmosphere of the home in which the wife puts on more airs than the husband can afford is never what it should be.

A soft answer may turn away wrath, but there are times when one derives more satisfaction from calling a man a liar.

A woman should never propose, because one rejection would crush her pride, while a dozen rejections would only egg a man on.

Too many fertile imaginations run weeds.

Wisdom is the name some men ap-
to their self-conceit.

Some men who don't trust them-
wonder why others won't trust them.

Many things may be preserved in
cogol, but law and order are not on
list.

A dime in your hand is better than
dollar in the pocket of the man who
owes you.

No man with a full beard has to w-
ry because of the neckties his good w-
buys for him.

Love sometimes flies out of the kitchen
window when the cooking school grad-
uate enters the door.

The average woman will jump at
sight of a mouse almost as quickly
she will at an offer of marriage.

If a girl says "No" three times in suc-
cession it's a hopeless case—unless
should change her mind.

Figures may not lie of their own
cord, but a skillful mathematician may
juggle them to suit his own purpose.

About the only time a henpecked man
is allowed to head the procession
when his wife thinks she hears burglars
downstairs.

The Chicago Pneumatic Tool Co.

MANUFACTURERS OF THE FOLLOWING

PNEUMATIC TOOLS, APPLIANCES, ETC.

After Coolers	Hammer Drills, Electric
Air Compressors	Hammer Drills, Pneumatic
Air Injectors	Hammers, Riveting
Air Motors	Hammers, Chipping and
Air Receivers	Calking
Air Jacks	Hammers, Stone
Air Lifts	Hoists, Duntley Electric
Airoilene Oil	Hoists, Pneumatic Geared
Airoilene Grease	Hoists, Straight Lift
Angle Gears, Boyer	Holders-on
Automatic Oiling Devices	Hose, Special High Grade
Chucks, Drill	Hose Clamp Tool
Chucks, Expanding	Hose Couplings (Univ'sal)
Commercial Car	Inter-Coolers
Cranes	Motor Trucks
Drift Bolt Drivers	Oil Driven Compressors
Drills, Boyer	Oil Engines
Drills, Hummer Hammer	Railway Motor Section
Drills, Keller	Cars
Drills, Little Giant	Reamers
Drills, Rock	Rivet Busters
Drilling Stands	Riveters, Jam
Elevators	Riveters, Yoke
Electric Drills, Duntley	Riveters, Compression
Electric Grinders, Duntley	Sand Rammers
Gas Engines	Speed Recorders
Gasoline Driven Com-	Staybolt Chucks
pressors	Stone Dressers
Gasoline Engines	Water Lifts
Grinders, Portable Electric	Winches, Portable

When writing to advertisers please mention Ideal Power.

"Little Giant"



The Power-Bred Truck

Mechanical Power is bred into the Little Giant Trucks of today—just as strength and endurance were bred into the Percherons of the past. The Little Giant is lively, responsive, like a fine-spirited horse—yet, like a young Mogul locomotive, it is dependable twenty-four hours in twenty-four. Thousands of Little Giant owners proudly boast "It never had a tow-rope on it yet."

No matter what your hauling needs may be, there is a Little Giant Truck to fit them. It will mean a new economy factor in your business. Let us talk it over with you. Little Giants are made by the Chicago Pneumatic Tool Company—a twenty-two year old concern with capital and resources of more than \$12,000,000—with more than 25,000 active customers. This Company's guarantee protects you absolutely.

We recommend the style of truck and type of final drive that best fit your locality and your needs.

The "Little Giant" Line Includes

Model 15—1 Ton Worm Drive	Model H—1½ Ton Chain Drive
Model H—1 Ton Chain Drive	Model 16—2 Ton Worm Drive

SPECIAL BODIES FOR EVERY PURPOSE

Write for Specifications and Prices

Chicago Pneumatic Tool Company
LITTLE GIANT BUILDING, 1615 MICHIGAN AVE., CHICAGO

1277

THE NEW YORK
PUBLIC LIBRARY
ASTOR, LENOX AND
TILDEN FOUNDATIONS

IDEAL POWER



MARCH, 1917

A MONTHLY MAGAZINE
PUBLISHED BY THE
**CHICAGO PNEUMATIC
TOOL CO.** CHICAGO NEW YORK

Chicago Pneumatic Tool Company

General Offices, Fisher Bldg.

Eastern Office, No. 52 Vanderbilt Ave.

CHICAGO

NEW YORK

BRANCH OFFICES

BOSTON: 185 Pleasant Street
BIRMINGHAM: 834 Brown-Marx Bldg.
BUFFALO: 503 Ellicott Square Bldg.
CINCINNATI: 1008 Mercantile Lib. Bldg.
CLEVELAND: 1241 E. 49th St.
CLEVELAND: 2122 Euclid Ave.
DETROIT: 2nd Ave. and Amsterdam St.
DULUTH, MINN.: Torrey Bldg.
EL PASO: 303 San Francisco St.
ERIE, PA.: 12th and Cranberry
FRANKLIN, PA.: No. 13th St.
JOPLIN, MO.: 308 Wall St.
LOS ANGELES: 241-43 S. Los Angeles St.

LOS ANGELES: 925 Title Insurance Bldg.
MILWAUKEE, WIS.: 1310 Majestic Bldg.
NEW ORLEANS: 513 Carondelet St.
OMAHA: 1023 W. O. W. Bldg.
PHILADELPHIA: 1740-42 Market St.
PITTSBURGH: 10 and 12 Wood St.
PORTLAND, ORE.: 46-48 Front St.
RICHMOND, VA.: 1004 Mutual Bldg.
SALT LAKE CITY: 117-19 W. 2nd So. St.
SEATTLE: 122 King St.
ST. LOUIS: 813-19 Hempstead St.
ST. PAUL: Pioneer Bldg.
SAN FRANCISCO: 71 First St.

FOREIGN

Canada: { Montreal, **Canadian Pneumatic Tool Co.**

{ The Holden Co., Ltd., Montreal, Toronto, Winnipeg.

British Columbia: Vancouver, Holden Co., Ltd., 542 Pendar Street, West.

Mexico: Mexico City, The General Supply Co., Av. Isabel La Catolica, No. 51.

Northern Mexico: (Sonora and Chihuahua), Don A. Carpenter & Co., El Paso, Texas.

Great Britain: { London, **The Consolidated Pneumatic Tool Company,**
Spain: { Ltd., 9, Bridge Street, Westminster, S. W

Portugal:

France: Paris, Anciens Etablissement, Glaenger & Perreaud, 18-20 Faubourg du Temple.

Belgium: Brussels, The Consolidated Pneumatic Tool Co., Ltd., 22 Chaussée de Forest, Porte de Hal.

Italy: Milan, The Consolidated Pneumatic Tool Co., Ltd., via A. Capellini 7.

Germany:

Austria Hungary:

Balkan States:

Norway:

Sweden:

Holland:

Switzerland:

Denmark:

Berlin, **Internationale Pressluft & Elektrizitäts-Gesellschaft** m. b. H. Berlin C. 54, Weinmeisterhof, Weinmeisterstrasse No. 14.

Russia: Petrograd; Phoenix Engineering Works Co., Ltd., Polustrovskaya. Quay No. 39.

India: Bombay, **Consolidated Pneumatic Tool Co., Ltd.**, Rampart Row, Fort.

Japanese Empire: Tokyo, Osaka, Seoul, Dairen, The F. W. Horne Co.

Philippine Islands: Manila, Frank L. Strong Mach. Co., 64-68 Calle Echague

Australia: Sydney, Henry W. Peabody & Co.

New Zealand: Wellington, Henry W. Peabody & Co.

South America: { General Sales Agents, International Railway Supply
Central America: { Co., 149 Broadway, N. Y.

South America: Buenos Aires, Argentina, Evans, Thornton & Co.

South Africa: { Johannesburg, The Consolidated Pneumatic Tool Co., Ltd.,
 190 Main Street.

Alaska: Cordova, The Harmon Machinery Co.

Cuba, Havana: J. F. Berdes & Co., Box 349.

Hawaiian Islands, Honolulu: H. S. Gray & Co., 832 Fort St.

BULLETIN DIRECTORY

Requests for these Bulletins should be directed to our Chicago or New York offices or to our nearest branch as shown on inside front cover.

PNEUMATIC TOOLS

- 121...Pneumatic Hammers and Foundry Appliances.
- 124...Pneumatic Riveting, Chipping, Calking and Stone Hammers.
- 125...Pneumatic Yoke, Jam and Shell Riveters, Holders-on, Drift Bolt Drivers, Rivet Busters.
- 127...Pneumatic Drills, Corner Drills, Reamers, Wood Borers, Flue Rolling and Tapping Machinery and Grinders.
- 128...Miscellaneous equipment for Pneumatic Drills, viz: Chucks, Twist Drills, Reamers, Augers, Flue Cutters, Flue Expanders, Angle Gears.
- 129...Hose, Hose Couplings and Hose Clamp Tools.
- 130...Lubrication of Pneumatic Tools.
- 132...Pneumatic Motors and Pneumatic Geared Hoists.
- 133...Cylinder Air Hoists and Jacks.

ELECTRIC TOOLS

- E-39...Duntley Electric Grinders.
- E-41...Duntley Electric Tools for Street and Interurban Railways.
- E-42...Universal Electric Drills.
- E-43...Duntley Universal Electric Hammer Drill.
- E-44...Duntley Electric Sensitive Drilling Stand.
- E-45...Duntley Portable Electric Hoists.
- 233...Duntley Electric Tool Booklet.

AIR COMPRESSORS AND FUEL OIL ENGINES

- 34-A...Class "G" Steam Driven "Chicago Pneumatic" Compressors.
- 34-C... "Chicago Pneumatic" Gasoline and Fuel Oil Engine Driven Compressors.
- 34-E...Instructions for Installing and Operating Giant Gas Engines.
- 34-F...Design and Construction Class "G" "Chicago Pneumatic" Compressors.
- 34-G...Air Receivers, Aftercoolers, Reheaters, etc.
- 34-H...General Instructions for Installing and Operating "Chicago Pneumatic" Compressors.
- 34-I...Instructions for Installing and Operating N-SS and N-SB Compressors.
- 34-J...Instructions for Installing and Operating Class O Compressors.
- 34-K...Class N-SO and N-SG Fuel Oil and Gas Driven Compressors.
- 34-L...General Pneumatic Engineering Information.
- 34-M...Class "O" "Chicago Pneumatic" Steam and Power Driven Compressors.
- 34-N...Class N-SS and N-SB Single Enclosed Compressors.
- 34-O...Instructions for the Installation and Care of "Chicago Pneumatic" Gasoline Driven Air Compressors.
- 34-Q...Giant A-O Fuel Oil Engine Applications.
- 34-S...Small Power Driven Compressors.
- 34-U...Instructions for Installing and Operating Class N-SO Fuel Oil Compressors.
- 34-V...Instructions for Installing and Operating Giant Fuel Oil Engines.
- 34-W...Class A-O Fuel Oil Engines.
- 34-X...Class A-G Gas and Gasoline Engines.
- 34-Y...Class N-SG Gas and Gasoline Driven Compressors.
- 34-Z...Class N-SS Automatic Steam Driven Compressors.
- 213...Simplat Flat Disc Valves.
- 224...Compressor Booklet.
- 231...Giant Fuel Oil Gas and Gasoline Engine Application Folder.

ROCK DRILLS AND HAND DRILLS

- 148...Chicago Valveless Hand Drills.
- 149...Chicago Portable Mine Hoist.
- 150...Chicago Coal Drills.
- 151...Chicago Slogger Rock Drills.
- 152...Chicago Gatling Drills.
- 153...Chicago Sinkers.
- 154...Chicago Stoper.
- 172...Chicago Plug and Feather Drill.
- 192...Stone Tools, etc.
- 216...Hummer Hammer Drills.

LITTLE GIANT TRUCK

Catalogue No. 235.

ROCKFORD and MISCELLANEOUS

- 263...Boyer Speed Recorder.
- 266...Rockford Railway Motor Car.
- 117...Lubrication of Rockford Cars.
- 119...Operation of Rockford Cars.
- 251...Chicago Pneumatic Water Lift Pump.

CHICAGO PNEUMATIC TOOL COMPANY

1014 Fisher Bldg., CHICAGO

Branches Everywhere

52 Vanderbilt Ave., NEW YORK

When writing to advertisers please mention Ideal Power.

CONVENTIONS.

March 19-22, 1917—National Railway Appliances Association, at the Coliseum, Chicago, Ill.
 March 20-22, 1917—American Railway Engineering Association, Chicago, Ill.
 May 1-4, 1917—The Air Brake Association, at Hotel Chisca, Memphis, Tenn.
 May 7-11, 1917—American Waterworks Association, at Richmond, Va.
 May 14-15-16, 1917—National Association of Manufacturers, at the Waldorf Astoria Hotel, New York City, N. Y.
 May 14-17, 1917—International Railway Fuel Association, at the Hotel Sherman, Chicago, Ill.
 May 21-22-23, 1917—Railway Storekeepers' Association, at the Hotel Sherman, Chicago, Ill.
 May 22-25, 1917—The American Society of Mechanical Engineers, Cincinnati, Ohio.
 May 22-25, 1917—Master Boiler Makers' Association, at the Hotel Jefferson, Richmond, Va.
 May 22-27, 1917—Boiler Makers Supply Men's Association, at the Hotel Jefferson, Richmond, Va.
 June 13-20, 1917—American Railway Master Mechanics' Association, at Young's Million Dollar Pier, Atlantic City, N. J.
 June 13-20, 1917—Master Car Builders' Association, at Young's Million Dollar Pier, Atlantic City, N. J.
 June 13-20, 1917—Railway Supply Manufacturers' Association, at Young's Million Dollar Pier, Atlantic City, N. J.
 June 25, 1917—American Institute of Electrical Engineers, at the Homestead Hotel, Hot Springs, Va.
 June 25-26, 1917—The American Boiler Manufacturers' Association, at the William Penn Hotel, Pittsburgh, Pa.
 August 5-11, 1917—Universal Craftsman Council of Engineers, at Toledo, Ohio.
 August 8-10, 1917—The American Association of Railroad Superintendents, at Minneapolis, Minn.
 August 21-23, 1917—International Railroad Master Blacksmiths' Association, at Chicago, Ill.
 August 30—September 1, 1917—American Railway Tool Foremen's Association, at Hotel Sherman, Chicago, Ill.
 September 4-7, 1917—International Railway General Foremen's Association, at Hotel Sherman, Chicago, Ill.
 September 10-15, 1917—National Association of Stationary Engineers, Evansville, Ind.
 September, 1917—The Traveling Engineers' Association, Chicago, Illinois.
 September 10-15, 1917—International Union of Steam & Operating Engineers, Cleveland, Ohio.
 September 18-21, 1917—Roadmasters and Maintenance of Way Association of America, at Hotel Auditorium, Chicago, Ill.
 September 24, 1917—American Institute of Metals, at Boston, Mass.
 September 24, 1917—American Foundrymen's Association, at Boston, Mass.
 October 16-18, 1917—Maintenance of Way Master Painters' Association of United States and Canada, Cleveland, Ohio.
 October 16-18, 1917—American Railway Bridge and Building Association, at St. Paul, Minn.

ENGINEERING SOCIETIES, ETC.

American Association of Railroad Superintendents (General)—General Secretary, E. H. Harman, St. Louis, Mo.
 American Electro-Platers Society—President, H. H. Williams, St. Louis, Mo.; Secretary-Treasurer, Walter Fraine, 507 Grand Avenue, Dayton, Ohio.
 American Highway Association, Colorado Bldg., Washington, D. C.
 American Institute of Electrical Engineers—President, H. W. Buck, 49 Wall St., New York; Secretary, F. L. Hutchinson, 33 W. 39th St., New York.
 American Institute of Mining Engineers—Secretary, Bradley Stoughton, 29 W. 39th St., New York City.
 American Mining Congress—Secretary, J. F. Callbreath, Jr., 743 Munsey Bldg., Washington, D. C.
 American Order of Steam Engineers—Supreme Chief Engineer, J. W. Parent, Philadelphia, Pa.; Supreme Corresponding Engineer, Edw. A. Reboul, 1110 Earl St., Philadelphia, Pa.

American Railway Engineering Association—Secretary, E. H. Fritch, 1011 Karpen Bldg., Chicago, Ill.

American Road Builders' Association—Secretary, E. L. Powers, 150 Nassau St., New York.
 American Society of Civil Engineers—Secretary, Chas. Warren Hunt, 220 W. 57th St., New York City.

American Society of Engineering Contractors (Inc.)—Secretary, J. R. Wemlinger, South Ferry Bldg., New York City. Meetings: Second Thursday, every month.

American Society of Heating and Ventilating Engineers—Secretary, C. W. Obert, 29 W. 39th St., New York City.

American Society of Mechanical Engineers—Secretary, Calvin W. Rice, 29 W. 39th St., New York City.

American Society of Naval Engineers—Secretary-Treasurer, Lieut. A. T. Church, U. S. N., Navy Department, Washington, D. C.

American Water Works Association—Secretary, J. M. Diven, 47 State St., Troy, N. Y.

Association of Civil Engineers, Cornell University—President, A. F. Williams, Ithaca, N. Y.; Secretary, A. S. Patrick, Ithaca, N. Y.

Association of Railway Electrical Engineers—Secretary, J. A. Andreuccetti, C. & N. W. Ry. Co., Chicago, Ill.

Boston Society of Civil Engineers—Secretary, S. Everett Tinkham, 715 Tremont Temple, Boston, Mass.

Canadian Society of Civil Engineers—Secretary, Clement H. McLeod, 176 Mansfield St., Montreal, Can.

Canadian Railway Club—Secretary, James Powell, Grand Trunk Ry., Montreal, Que.

Central Railway Club—Secretary, H. D. Vought, 95 Liberty St., New York.

Civil Engineers Society of St. Paul—Secretary, Edw. J. Dugan, Room 7, Old State Capitol Bldg., St. Paul, Minn.

Cleveland Engineering Society—Secretary, C. E. Drayer, Chamber of Commerce Bldg., Cleveland, Ohio.

Connecticut Society of Civil Engineers—President, Clarence Blakeslee, New Haven, Conn.; Secretary-Treasurer, J. Frederick Jackson, Box 1304, New Haven, Conn.

Detroit Engineering Society—Secretary-Treasurer, B. V. Williamson, 1800 David Whitney Bldg., Detroit, Mich.

Engineering Association of the South—Secretary-Treasurer, W. Harwell Allen, 928 Stahlman Bldg., Nashville, Tenn.

Engineers' Club of Cincinnati—Secretary, E. A. Gast, P. O. Box 333, Cincinnati, Ohio.

Engineers' Club of Minneapolis—President, L. S. Gillette, 74 Chamber of Commerce, Minneapolis, Minn.; Secretary, Louis Clousing, 2411 Oakland Ave., Minneapolis.

Engineers' Club of Philadelphia—Secretary, R. H. Fernald, 1317 Spruce St., Philadelphia, Pa.

Engineers' Club of St. Louis—Secretary, W. W. Horner, 5203 Maple Ave., St. Louis, Mo.

Engineering Society of Purdue University, Lafayette, Ind.—Secretary, C. B. Penrod, 123 State St., W. Lafayette, Ind.

Engineering Society of Buffalo—President, John Younger; Secretary, W. J. Gamble, 247 Rano St., Buffalo, N. Y.

Engineers' Society of Pennsylvania—Secretary, E. R. Dasher, 31 S. Front St., Harrisburg, Pa.

Engineers' Society of Northeastern Pennsylvania—Secretary, T. F. McKenna, care of Engineers' Club, Scranton, Pa.

Engineers' Society of Western Pennsylvania—Secretary, Elmer K. Hiles, 2511 Oliver Bldg., Pittsburgh, Pa.

Illinois Society of Engineers—Secretary, E. E. R. Tratman, Wheaton, Ill.

Indiana Engineering Society—Secretary, Chas. Brossman, Indianapolis, Ind.

International Railway Congress Association—President (of the International Commission), W. Toudeller, 11 Rue de Louvain, Brussels, Belgium; Secretary, General L. Weissenbruch, same address.

Iowa Engineering Society—Secretary-Treasurer, Prof. J. H. Dunlap, Iowa City, Iowa.

Lake Superior Mining Institute—Secretary, A. J. Yungbluth, Ishpeming, Mich.

Louisiana Engineering Society—President, Samuel Young, Secretary, W. T. Hogg, P. O. Sta. 30, New Orleans, La.

Michigan Engineering Society—President, Geo. W. Bissell, East Lansing, Mich.; Secretary, Samuel J. Hoexter, Kalamazoo, Mich.

Montana Society of Engineers—President, Martin H. Gerry, Jr., Helena, Mont.; Secretary, Clinton H. Moore, Butte, Mont.

New England Association of Commercial Engineers—President, F. S. Eggleston, Jr., 53 Devonshire St., Boston, Mass.; Secretary, Jas. F. Morgan, 53 Devonshire St., Boston, Mass.

New England R. R. Club—Secretary, W. E. Cade, Jr., 633 Atlantic Ave., Boston, Mass.

New York Railroad Club, Secretary, Harry D. Vought, 95 Liberty St., New York, N. Y.

Ohio Engineering Society—President, Clyde T. Morris, O. S. U. Columbus, Ohio; Secretary, Jno. Laylin, Norwalk, Ohio.

Ohio Society of Mechanical, Electrical and Steam Engineers—Secretary-Treasurer, Frank E. Sanborn, Ohio State University, Columbus, Ohio.

Railway Club of Pittsburgh—Secretary, J. B. Anderson, Room 207, Penn. R. R. Station, Pittsburgh, Pa.

Richmond Railroad Club—Secretary, F. O. Robinson, C. & O. Railway, Richmond, Va.

Rochester Engineering Society—Secretary-Treasurer, F. C. Taylor, 34 Clinton Ave. North, Rochester, N. Y.

St. Louis Railway Club—Secretary, B. W. Frauenthal, Union Station, St. Louis, Mo.

Southern & Southwestern Railway Club—Secretary, A. J. Merrill, Grant Bldg., Atlanta, Ga.

Toledo Society of Engineers—President, L. M. Gram, 1047 Spitzer Bldg., Toledo, O.; Secretary, L. T. Owen, 1047 Spitzer Bldg., Toledo, O. Regular meeting, second Friday in each month.

Utah Society of Engineers—Secretary, Hugh C. Ellia, Capitol Bldg., Salt Lake City, Utah. Third Wednesday of each month, except July and August.

Vermont Society of Engineers—Secretary, Geo. A. Reed, Montpelier, Vt.

Western Railway Club—Secretary, J. W. Taylor, 1113 Karpen Bldg., Chicago, Ill.

Western Society of Engineers—President, B. E. Grant, 207 City Hall, Chicago; Secretary, E. N. Layneid, 1735 Monadnock Bldg., Chicago.

MECHANICAL AND TRADE SOCIETIES.

Air Brake Association—Secretary, F. M. Nelson, 3014, 165 Broadway, New York, N. Y.

American Boiler Manufacturers' Association—President, M. H. Broderick, Muncie, Ind.; Secretary, H. N. Covell, Lidgerwood Mfg. Co., Dikeman St., Brooklyn, N. Y.

American Electric Railway Association—Secretary-Treasurer, E. B. Burrill, 8 W. 40th St., New York City.

American Electric Railway Manufacturers' Association—Secretary, Fred C. J. Dell, 165 Broadway, New York City.

American Foundrymen's Association—Secretary, A. O. Backert, 12th and Chestnut Sts., Cleveland, Ohio.

American Institute of Metals—Secretary-Treasurer, W. M. Corse, 106 Morris Ave., Buffalo, N. Y.

American Railway Association—General Secretary, J. E. Fairbanks, 75 Church St., New York City.

American Railway Bridge and Building Association—President, C. E. Smith, 2073 Railway Exchange, St. Louis, Mo.; Secretary-Treasurer, C. A. Lichty, C. & N. W. Ry., Chicago.

American Railway Master Mechanics' Association—President, Wm. Schiffo, G. M. S., Erie R. R., New York, N. Y.; Secretary, J. W. Taylor, Karpen Bldg., Chicago.

American Railway Tool Foremen's Association—Secretary, R. D. Fletcher, Belt Railway of Chicago.

American Road Builders' Association—Secretary, E. L. Powers, 160 Nassau St., New York. Boiler Makers' Supply Men's Association—Secretary, Geo. Slate, The Boiler Maker, 461 Eighth Ave., New York City.

Canadian Association of Stationary Engineers—Secretary, W. A. Crockett, Mount Hamilton, Ont., Can.

Canadian Roadmasters' Association—Secretary, J. M. Mackenzie, West Toronto, Can.

Car Foremen's Association of Chicago—President, A. La Mar, Master Mechanic, Penn. R. R., Chicago, Ill.; Secretary, Aaron Kline, 841 N. Lawler Ave., Chicago.

General Superintendents' Association of Chicago—Secretary, A. M. Hunter, 321 Grand Central Station, Chicago.

International Railroad Master Blacksmiths' Association—Secretary, A. L. Woodworth, C. H. & D. Ry., Lima, Ohio.

International Railway Fuel Association—Secretary-Treasurer, J. G. Crawford, 702 E. 51st St., Chicago.

International Railway General Foremen's Association—Secretary-Treasurer, Wm. Hall, C. & N. W. Ry., 1061 N. Wabash, Winona, Minn.

International Union of Steam and Operating Engineers—President, Milton Snellings; Secretary-Treasurer, James G. Hannahan, 6334 Yale Ave., Chicago.

Master Boiler Makers' Association—President, D. A. Lucas, G. F. B. M., C. B. & Q. R. R., Havelock, Nebr.; Secretary, Harry D. Vought, 95 Liberty St., New York City.

Master Car Builders' Association—President, C. E. Chambers, I. M. P., C. R. R. of N. J., Jersey City, N. J.; Secretary, J. W. Taylor, Karpen Bldg., Chicago, Ill.

Master Car and Locomotive Painters' Association—Secretary, A. P. Dane, B. & M. R. R., Reading, Mass.

Maintenance of Way Master Painters' Association of United States and Canada—Secretary, F. W. Hager, The Denver Road, Ft. Worth, Texas.

National Association of Manufacturers—President, Col. Geo. Pope, Hartford, Conn.; Secretary, Geo. S. Budnot, New York City.

National Association of Stationary Engineers—Secretary, Fred W. Raven, 417 S. Dearborn St., Chicago, Ill.

National Founders' Association—Secretary, J. M. Taylor, Room 842, 29 S. La Salle St., Chicago, Ill.

National Railway Appliances Association—Secretary-Treasurer, C. W. Kelly, 122 S. Michigan Ave., Chicago, Ill.

Purchasing Agents' Association of Pittsburgh—President, E. L. McGrew, Standard Underground Cable Company, Pittsburgh; Secretary, H. E. Harmon, Des Moines Bridge & Iron Works, Pittsburgh.

Railway Equipment Manufacturers' Association—President, F. N. Bard, Barco Brass & Joint Co., Chicago; Secretary, W. E. Brumble, Galena Signal Oil Co., Richmond, Va.

Railway Signal Association—President, C. A. Dunham, Signal Engr., Great Northern Ry., St. Paul, Minn.; Secretary, C. C. Rosenberg, Bethlehem, Pa.

Railway Storekeepers' Association—President, W. A. Summerhays, G. S. K., I. C. R. R., Chicago, Ill.; Secretary, J. P. Murphy, Box C, Collinwood, Ohio.

Railway Supply Manufacturers' Association—Secretary-Treasurer, J. D. Conway, 2136 Oliver Bldg., Pittsburgh, Pa.

Roadmasters' and Maintenance of Way Association—Secretary, P. J. McAndrews, C. & N. W. Ry., Sterling, Ill.

Traveling Engineers' Association—Secretary W. O. Thompson, care of General Offices, N. Y. C., Cleveland, Ohio.

Universal Craftsman Council of Engineers—Secretary, Thos. H. Jones, Cherrydale, Alexandria County, Va.

A Safe Resolution.

She—"When we are married I will never see you coming home at 2 in the morning, will I?"

He—"Not if you are a heavy sleeper, dear."



No. 807



No. 930

The "Paragon" High Speed Drill

Holds the World's Drilling Record—IT'S RESULTS THAT COUNT

Just give "Paragon" Drills a Test—They'll convince you.

The  Twist Drill Co.

New York

CLEVELAND

Chicago 10

NECESSITIES

High Grade Rubber Goods
Fire Hose
Reels, Nozzles
Fire Hose Carts
Rubber Cement
P. & W. Rubber Preservative
Rubber Boots
Leather-Soled Rubber Boots

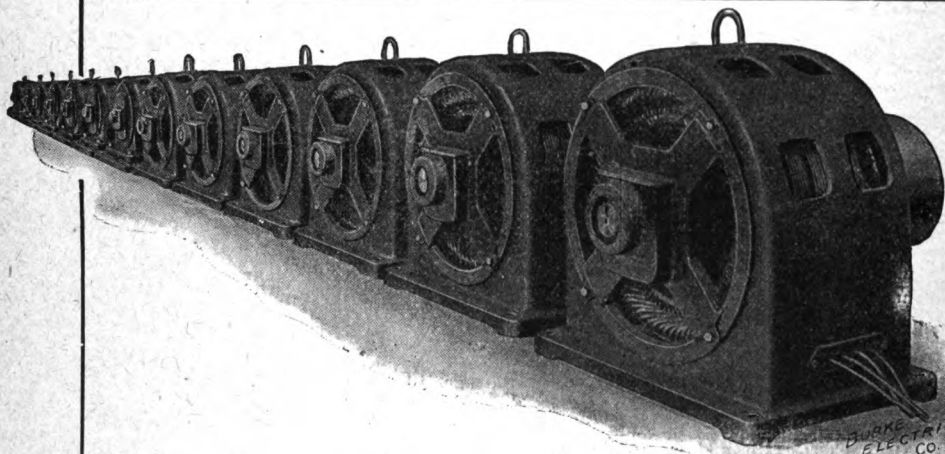
Leather Belting
Upholsterer's Leather
Leather and Silk Fringes
Vestibule Diaphragms
Gimp
Brass Nails
Leather Head Nails

Signal Flags
Bunting
Linoleum
Cab Cushions
Cab Curtains
Track Jacks
Economy Soap Stock
Nut Locks

GUILFORD S. WOOD

Great Northern Building,

CHICAGO, ILLINOIS



BURKE ELECTRIC COMPANY, ERIE, PENNA.

SALES OFFICES IN PRINCIPAL CITIES

Motors for all purposes where reliable power is essential

ALL SIZES

ALL SPEEDS

ALL VOLTAGES

2 AND 3 PHASE ALTERNATING AND DIRECT CURRENT

IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances and Motor Trucks
By THE IDEAL POWER PUBLISHING COMPANY
Fisher Building, Chicago

VOL. XII

MARCH, 1917

No. 4

TRUCK MAKERS ARE OPTIMISTIC

An Interview With

W. O. Duntley, President Chicago Pneumatic Tool Co.

"The manufacturer of motor trucks has many reasons for feeling optimistic over the future of his business. The well known makers have recently closed the most prosperous year of their history, and many of them have been far oversold.

"This has been due to the heavy volume of business which has speeded up industry all along the line.

"To keep pace with the growing demand we have greatly increased the capacity of our Chicago Heights factory, the 'Home of the Little Giant,' and have been able to contract for delivery of a generous amount of material for the coming twelve months.

"While the price of horses has steadily increased, the cost of motor trucks, despite the greatly increased costs of labor and raw material, has shown no appreciable rise. This is due to the fact that production has greatly increased, resulting in reduced overhead.

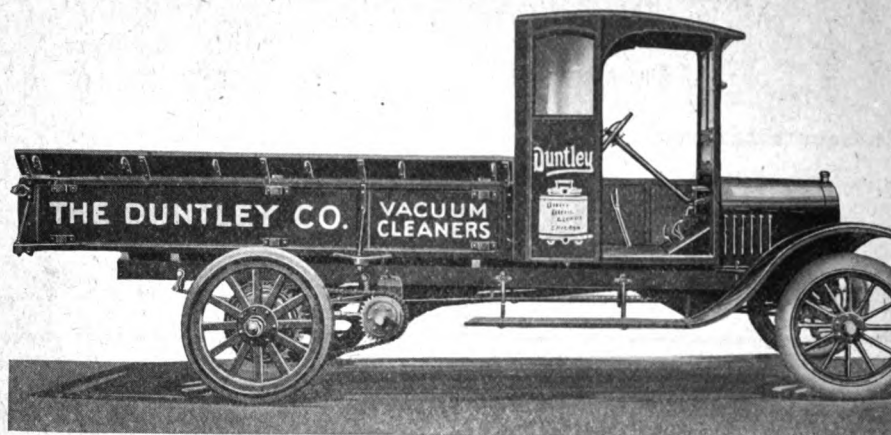
"It is now, therefore, actually cheaper to install a motor truck delivery system than a horse and wagon delivery system. Therefore, firms installing delivery systems for the first time are invariably installing motor trucks, while firms which now use horses and wagons recognize that motor trucks are vastly more eco-

nomical to operate, more durable and less troublesome, and are making the change to motor trucks as rapidly as their finances permit.

"Another cause for optimism on the part of the industry is the tremendous increase in the good roads movement. State after State has made huge appropriations for road improvements, and the public en masse is demanding good roads. Every time a rural road is improved to a market center it makes a host of farmer motor truck prospects. The time is not far off when every farmer will consider a motor truck as necessary a part of his equipment as a plow.

"Good roads also mean that the business men in towns and cities will extend their delivery systems into the surrounding country, and motor trucks are not only more economical for rural delivery but they offer the only means by which long routes can be covered.

"Firms which have hauling to do are, of course, anxious to get this done as efficiently and economically as possible. This not only means that they must install motor trucks but the large haulers must install various sizes of trucks for various classes of work. A large packer should have a heavy 3½- or 5-ton truck for hauling to and from the freight de-



Little Giant Convert-A Car. By means of the Little Giant Convert-A-Car attachment any Ford car can be easily converted into a one-ton truck. It can be re-converted into a Ford car without delay or difficulty. Prices and details upon request.

pots and then he should have a 1-ton truck for local delivery work, etc. The fact that such conditions exist, and that many concerns prefer to buy their entire line of trucks from one manufacturer has influenced us to build a complete line of trucks. Another influence was the incessant cry from our dealers for a line of models, and the plausible claim that they could make much more money by handling a complete line. As far as heavier trucks are concerned, many old customers who have bought air tools and compressors from us for years, have demanded heavier trucks than we have until now been able to supply. In view of these considerations we have added the Little Giant Convert-a-Car (converts a Ford into a 1-ton truck); the Model 17, $3\frac{1}{2}$ -ton worm drive, and the Model 18, 5-ton worm or chain drive. The Model 18 is built on orders only and will not be carried in stock.

A Simple Request.

Murderer—"Is this the guy who is to defend me?"

Judge—"Yes; he's your lawyer."

Murderer—"If he should die could I have another?"

Judge—"Yes."

Murderer—"Can I see him alone for a few minutes?"

SPECIFICATIONS "LITTLE GIANT CONVERT-A-CAR."

Axle.— $2\frac{5}{8} \times 2\frac{5}{8}$ Rectangular section s forged high grade carbon steel.

Bearings.—Roller Bearings.

Brakes.— $12 \times 2\frac{1}{2}$ Internal expanding, li with raybestos.

Springs.—Semi-elliptic $42 \times 2\frac{1}{4}$ sha links at both ends. Auxiliary c spring mounted on heavy struct steel, tee cross member arranged bear on axle when loaded sufficien

Sprockets.—Interchangeable cut s sprockets to take standard makes roller chains, 1" pitch $\frac{5}{8} \times \frac{5}{8}$ roller.

Brake Drums.—Diameter— $12 \times 2\frac{1}{2}$ br surface, bolted to rear hubs.

Radius Rods.—Substantial radius easily adustable for proper chain t sion, and allowing free action to c pensate for uneven road surface.

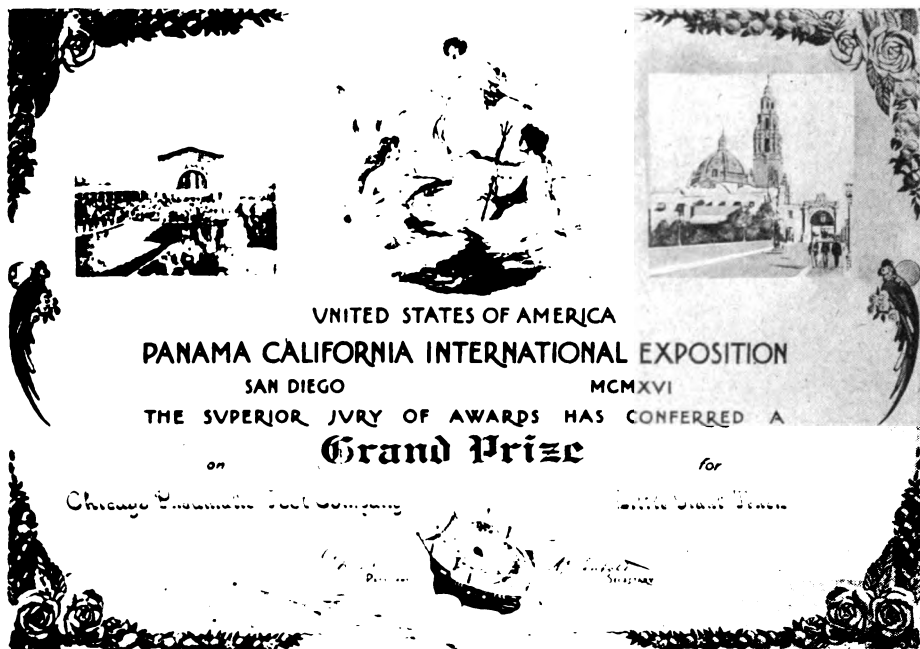
Drive.—Double chain, 1" pitch, $\frac{5}{8} \times \frac{5}{8}$ ler, easily removed for cleaning.

Wheels.— $34 \times 3\frac{1}{2}$ heavy artillery, sec growth hickory twelve 2×2 rectangi spokes.

Tires.—Pressed on or demounta $34 \times 3\frac{1}{2}$ solid.

Speed.—Between 12 and 20 miles hour.

Load Distribution.—Chassis, appro mately 50% on rear axle, full load,



**PANAMA CALIFORNIA EXPOSITION CONFERS GRAND PRIZE
ON LITTLE GIANT MOTOR TRUCK**

The Panama California International Exposition has conferred a Grand Prize on the Little Giant Motor Truck. As there was a great deal of rivalry among motor truck manufacturers for this award the Chicago Pneumatic Tool Company has just cause for pride in the new honor brought to it by the Little Giant.

proximately 90% on rear axle.

Loading Space.—108" length of frame in rear of cab top 99".

Wheel Base.—125".

Carrying Capacity.—Total permissible load on chassis, including body, 2,800 lbs.

Weight.—Including Ford chassis and without body, 2,100 lbs.

Repairs.—Interchangeable repair parts furnished at reasonable prices.

Frame.—4"x5¼ lbs. structural steel channel, length 168 inches, width 32 inches. This unit telescopes the Ford frame, to which it is rigidly attached at front, sides and rear. The rear axle of the Ford is transformed into a jackshaft merely by removing the wheels and replacing them with the sprockets. The axle is then supported from the steel channel frame in substantial hangers, and the chains are applied, transmitting

the drive to the rear wheels. The axle is not cut nor damaged in any way and the outfit can readily be converted into a pleasure car again, by reversing the process of assembly.

**SPECIFICATIONS "LITTLE GIANT"
MODEL 17—¾ TON TRUCK.**

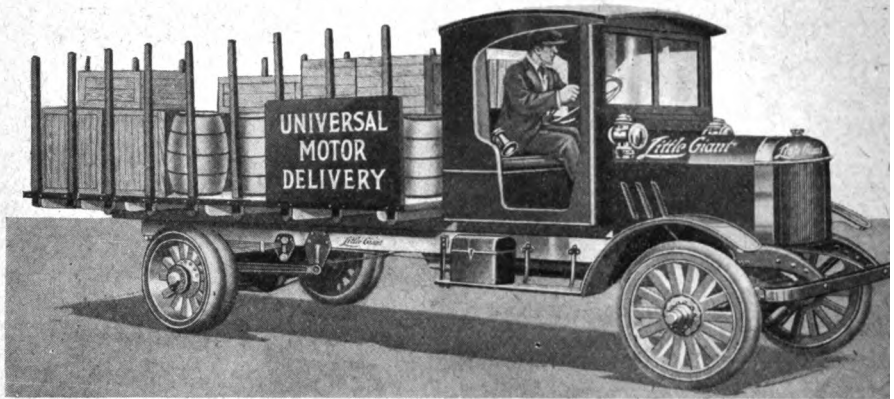
Axles.—Timken—Front axle I beam section 2¼x3½ in. solid center, thrust bearing on knuckle; rear axle, worm driven, ratio, 10½:1; drive axle full floating, 2" diameter.

Bearings.—Ball and roller bearings except engine.

Brakes.—Hand brake and foot brake, internal duplex on 21" brake drum on rear wheel. Both brakes equalized.

Carburetor.—Schebler Type R, size 1½". Air and gasoline adjustment on dash.

Chassis Dimensions.—Length of chassis



Model 17—3½-ton Little Giant Truck. A new big brother in the Little Giant family. demand of our patrons for a heavy truck has induced us to build this dreadnaught of m trucks. Price upon request.

over all, including bumper, 280". Length of frame back of driver's seat, 180". Wheel base 176". Over-all width of chassis outside of fenders, 73". Height of frame from ground, loaded, 34".

Control.—Left hand steer and center control.

Control Engine.—Hand throttle and foot accelerator.

Cooling.—Tubular radiator mounted on springs, gear driven centrifugal pump, belt driven and adjustable fan.

Clutch.—Dry plates, multiple disc type.

Engine.—Continental 4½" bore, 5½" stroke, cylinders in pairs, S. A. E. rating 32—4 H. P. This motor will develop 45 H. P. at approximately 1,500 R. P. M.; 3 point suspension, unit power plant.

Frame.—Structural steel channel section ⅝" thick, 8" deep, 2⅜" at top and bottom; width of frame, 36".

Gasoline Capacity.—Twenty gallons, tank located under seat; gravity feed.

Ignition.—High tension magneto.

Oiling.—Combination force and splash system. The force feed is operated by a vertical plunger pump driven from cam shaft. Capacity of oil, one gallon. Gauge shows supply at all times.

Load.—Total admissible load on chassis including body, 9,000 pounds. Rated

capacity of truck, 7,000 pounds. Chassis weight, 6,200 pounds.

Percentage of chassis weight on rear tires, 40%.

Percentage of chassis body and load on rear tires, 70%.

Percentage of load, including body, on rear tires, 90%.

Speed.—12 miles per hour at 1,100 R. M. motor speed. Total reduction 4th speed, 10⅓:1, on 3d speed, 18.4:1, on 2d speed, 32.64:1; on 1st speed, 51.54:1; on reverse, 59.70:1.

Springs.—Semi-elliptic; 3x44 front, 4x44 rear.

Steering Gear.—Screw and nut type, reversible.

Tires (Pressed on or demountable). Solid 38x5 single in front, 38x5 double in rear.

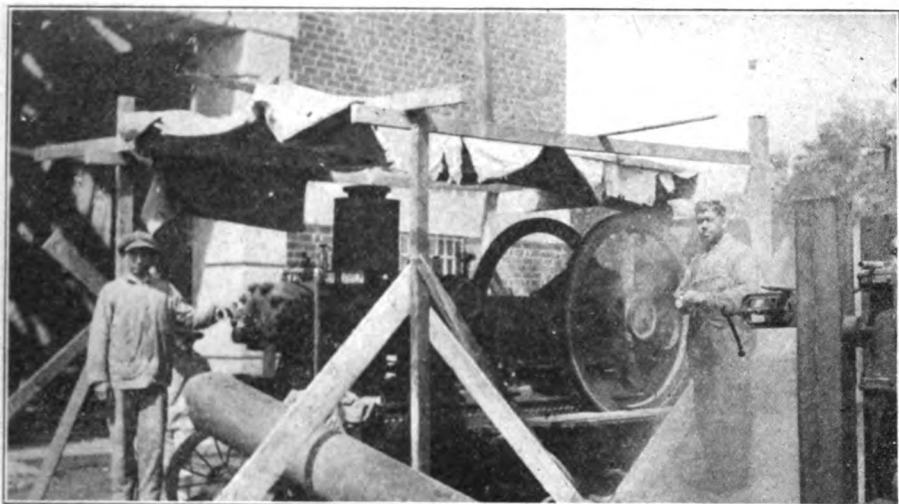
Transmission.—Selective type sliding gear, direct on 4th speed, four forward and one reverse. Ratio on 4th speed, 1:1; on 3d speed, 1.79:1, on 2d speed, 3.16:1; on 1st speed, 4.99:1; on reverse, 5.78:1.

Tread.—66½" front, 65¼" rear.

Water Capacity.—Nine gallons.

Wheels.—Artillery type, 2½" rectangular spokes in front, 3" rectangular spokes in rear, S. A. E. band.

Chassis Equipment.—Includes the running gear, tires, driver's seat, cab, d



On the job. A familiar scene wherever compressed air is used in construction work. Michael Staub, Ashokan, New York, is an enthusiastic user of Chicago Pneumatic Portable Fuel Oil Compressors.

and foot boards, front mud guards, side and tail oil lamps, mechanical horn, metal tool box on running board, and full set of tools.

A Satisfied Contractor.

"In reference to the 'Chicago Pneumatic' Type N-S0, Single, Fuel Driven Air Compressor purchased of you in March, 1915, I desire to say that this machine has come up to all expectations. It is being operated daily in connection with my cement gun, and never has the gunman complained of lack of air or insufficient pressure, although this air is piped to the gun a distance of over 650 feet. This machine has also been successfully used in connection with the erection of steel on the Superstructures at the Ashokan Reservoir, now in the course of construction. The pressure used for this operation was from 90 to 100 pounds.

"From the standpoint of fuel consumption, it is really without par for economical running, consuming an average of from 16 to 20 gallons of fuel oil per day's run.

"In closing, wish to state that my satisfaction with this machine is complete, and if my future needs require the services of another compressor, it shall certainly be a fuel oil compressor.

"Yours very truly,

"MICHAEL STAUB,"

Ashokan, N. Y.

Head Work.

"Maria, you'll never be able to drive that nail with a flat-iron. For heaven's sakes use your head," admonished Mr. Stubkins. And then he wondered why she would not speak to him the rest of the day.

A Disagreeable Job.

A washerwoman applied for help of a gentleman, who gave her a note to the manager of a certain club. It read as follows: "Dear Mr. X:—This woman wants washing."

Very shortly afterwards the answer came back: "Dear Sir:—I dare say she does, but I don't fancy the job."



The above photo shows a two-ton Little Giant loaded with furniture owned by the Monrovia Transfer Company, Monrovia, Calif. This truck left Los Angeles on Saturday, December 16th, at 1 P. M., for Bakersfield, Calif., over the Ridge Route, a distance of 110 miles. The Ridge Route is considered the most mountainous road in America and the building was one of the greatest of engineering feats.

After unloading at Bakersfield the truck returned to Los Angeles, arriving at 1 P. M. on Monday, December 18th. It is such tests as this that prove the Little Giant has no superior for rough and strenuous work.

LITTLE GIANT

506-8 W. Pico St., L. A.

謹賀新年

リツツル、ヂヤイアント

一噸積より二噸迄

チェン及ウオームドライブにて堅牢無比
馬力の強大なる事は其名の示しが如し
同胞諸君の使用数多あり

リツツルヂヤイアント

販賣所

西ビュー街五〇六、八

エチ、エル、ミラー

HASHIMURA TOGO AND THE SMALL GIANT.

The accompanying advertisement was recently run in the Los Angeles Daily News, "The Rafu Shimpo." A free translation follows:

Happy New Year,

Appreciating the past favour, and wishing future trade solicited.

LITTLE GIANT,

made in 1 ton, 1½ ton and 2 ton capacities, and in chain and worm drive.

The strong construction of this truck so well known, as the name indicates in itself.

Now there are quite many Japanese owners.

Los Angeles Branch of Chicago Pneumatic Tool Co.,

506-8 West Pico St., Los Angeles, Cal
Manager, H. L. Miller,

THE ARTESIAN WAY OF PUMPING WATER FROM DEEP WELLS Has Many Advantages

— INSTALL THE — **Chicago Pneumatic Water Lift Pump**

- ¶ No pulling of wells caused by broken sucker rods, cut cylinders, bad check valves, etc.
- ¶ No trouble from sand or gravel cutting your cylinders and valve and thereby cutting the efficiency.
- ¶ Water is delivered free from oils, surface water and other impurities.
- ¶ Well equipment is guaranteed for the life of the pipes in the water.

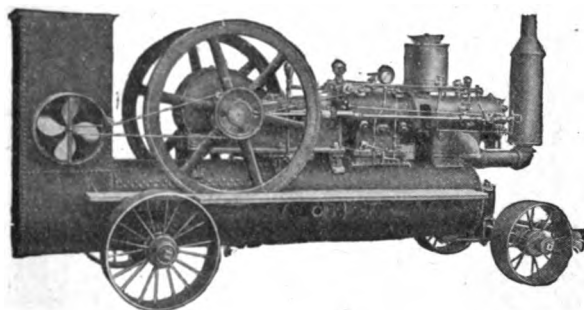
Let us know your conditions and get our proposition

CHICAGO PNEUMATIC TOOL CO.
1014 Fisher Bldg., Chicago 52 Vanderbilt Ave., N. Y.

Branches Everywhere



Chicago Pneumatic
Water Lift Pump



Destined for Russia, but held up at New York due to shipping complications, twelve of these sturdy, portable Fuel Oil Driven Compressors, Class N-SO, as illustrated above, have been returned to our factory at Franklin, Pa., and are subject to immediate delivery. Capacities from 196 to 309 cubic feet free air per minute. Have passed rigid government inspection. ¶ Will be sold tank mounted as shown, or unmounted for semi-portable or stationary service. Write for further information.

1014 Fisher Building, Chicago—CHICAGO PNEUMATIC TOOL CO.—52 Vanderbilt Ave., New York

When writing to advertisers please mention Ideal Power.



Few of us can look back to the days when transportation was monopolized by oxen. Such is the privilege accorded Mr. J. J. Gareau, the gentleman at the wheel. Mr. Gareau, in spite of his 85 years, drives his Little Giant everywhere. Mr. Gareau is an enterprising farmer and lives near Montreal.

CHICAGO 2X JUNIOR SURFACER

For Surfacing Granite Blocks
and Similar Work



The upright column is supported by an iron base, so that it is held rigid. The arm which carries the pneumatic tool travels through the carriage which rolls up and down the column. All bearings are of roller type and adjustable to wear in all directions. This machine is built on practical lines and will stand hard usage. The construction is very simple and all bearings are liberal.

This machine is portable, two men being able to move it from place to place, saving the trouble of bringing the stone to the machine.

Write for Bulletin 192 Branches Everywhere

Chicago Pneumatic Tool Co.

1014 Fisher Bldg. 52 Vanderbilt Ave.
CHICAGO NEW YORK

When writing to advertisers please mention Ideal Power.



SOLDCO Is Not a Dressing — It Preserves the Leather

ITS simple operation to apply "Soldco" to your leather belts—a handful of cotton waste dipped in "Soldco" and wiped over the outside surface preserves the leather and makes your belts immune to dampness, steam, heat, chemical fumes and all atmospheric conditions.

"Soldco" drives out all moisture, grease, oil, dirt and prevents deterioration of your belts. Old belts which are ready for the junk heap can be carried with "Soldco" and put back into service.

"Soldco" is non-acid, non-volatile, non-inflammable and non-combustible.

By treating your shop belts with "Soldco" you double their service life and increase their transmission power 20%.

Write for complete information and sufficient quantity of "Soldco" for a tryout on your belts.

THE DUNTLEY COMPANY

Fisher Building, Chicago

295 Fifth Ave., New York City

USE *Little Giant*



BALL Bearing Drills for Drilling, Reaming, Flue Rolling, Tapping, Wood Boring, etc.

The Ball Bearings

The increased port areas

The directness of port passages

The increased diameter of thrust bearings

The hand holes in cylinders, and

The method of bolting the bonnets and gear cases to the cylinders are features of Little

Giant Drills resulting in the high power,

the long life and the economical upkeep and air consumption for which these machines are famous.

Send for Bulletin 127

Chicago Pneumatic Tool Co.

1014 Fisher Building, Chicago

52 Vanderbilt Ave., New York City

BRANCHES EVERYWHERE

When writing to advertisers please mention Ideal Power.

IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air
and Electrical Appliances

BY THE

IDEAL POWER PUBLISHING CO.
1014 FISHER BUILDING
CHICAGO, U. S. A.

C. I. HENRIKSON

Editor

Vol. XII. MARCH, 1917

No. 4

TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year
Other Countries in Postal Union, 50 cents per year

ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our
subscription list

The Duntley Hydro Pneumatic Gas Generator.

What has proven itself to be the realization of the wildest dream of the motorist—cheap fuel for automobiles—has recently been accomplished in the perfection of the Duntley Hydro Pneumatic Gas Generator, the invention of Mr. J. W. Duntley. By combining kerosene with gasoline in the proportion of half and half, and the addition of water and air, a mixture is obtained, which not only gives more power and greater mileage per gallon of fuel, but the cost is reduced by nearly fifty per cent.

The operation of the Duntley Hydro Pneumatic Gas Generator is simple. There are no moving parts. The vaporized mixture of coal oil and gasoline comes in contact with the water vapor. The resultant mixture, consisting of gasoline, kerosene, water and air, is exploded and complete combustion takes place, leaving no carbon on the spark plugs, and with no smoke whatever.

While the device may be applied to any pleasure car, it is an exclusive feature of Little Giant Trucks, and will be supplied when so requested.

A 2-ton Little Giant, loaded to capacity, and equipped with the Duntley Hydro Pneumatic Gas Generator was recently given a 72-mile test. On this trip it developed a third more power, and a third greater mileage than had been

possible with the gasoline burning carburetor, and a high class gasoline driven pleasure car which accompanied the Little Giant on the trip used two gallons more of fuel than did the motor truck. A speed of 39 miles an hour was obtained.

On Feb. 15th, a Little Giant 2-ton truck equipped with a Duntley Hydro Pneumatic Gas Generator and loaded to capacity undertook a trip to Des Moines, Ia., where it was to be exhibited at the Des Moines automobile show, which opened on the following Monday, Feb. 19th.

The time of year offered the hardest road conditions a motor truck would ever have to meet. In many places the snow drifts covered the roads to an extent that made them all but impassable. In other places the snow had melted and the road was full of slush and mud. Such conditions, together with the cold and stormy weather that was encountered, made a test that for hardships cannot be equalled, but the Little Giant, still carrying its capacity load arrived in Des Moines on schedule, having covered a distance of 393 miles, 95 of which were run on low gear. It consumed but 42 gallons of fuel on the entire trip, which makes a record that cannot be equalled.

Further information regarding the Duntley Hydro Pneumatic Generator will be supplied upon request.

Situations Wanted.

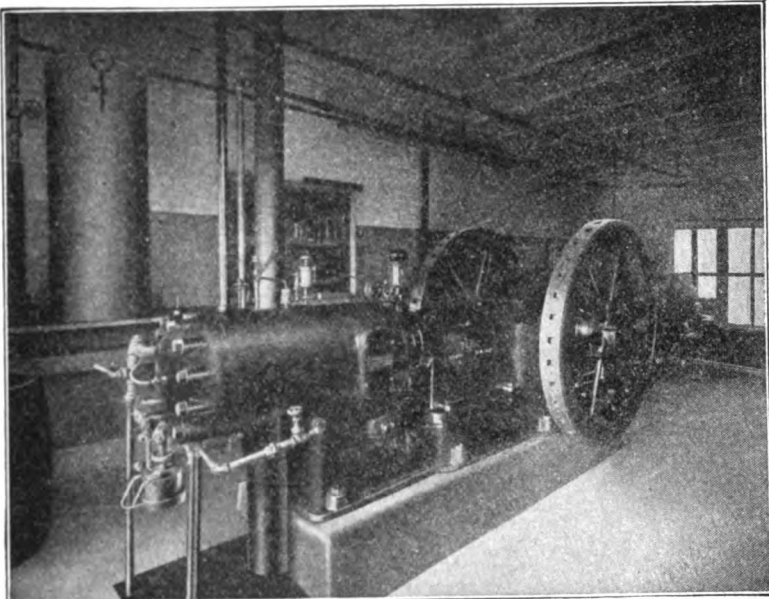
Wanted: Position by man with fifteen years' experience as head of purchasing and accounting departments with railways, locomotive and car works. Highest references. Address Ideal Power Ad. 22.

Wanted: Position as master mechanic or shop superintendent. Thirty-five years of age, married, strictly temperate, nineteen years' experience; past twelve and one-half years in official capacity with large shops. Can give best of references. Address Ideal Power Ad. 23.

Giant Fuel Oil Engine Operating Flour Mill

Owned by the Laurel Milling and Grain Co., Laurel, Neb., and installed early in 1916. Has been in continuous operation — all through the wheat season, from ten to eighteen hours per day—without a cent of cost for repairs.

Absence of intricate mechanism and delicate adjustments and general simplicity of construction make the Giant Engine the ideal prime mover for isolated power plants. No expert attendance is required and the cost of operation is extremely low. Ask for Bulletin 34W and Folder 281.



Chicago Hummer Hammer Drills

are making new records for fast work and economical up-keep.

**Independent
Rotation
Indestructible
Ball Valves**

Write for Bulletins and Prices

Chicago Pneumatic Tool Company

BRANCHES EVERYWHERE

1014 Fisher Building, Chicago
52 Vanderbilt Ave., New York

When writing to advertisers please mention Ideal Power.

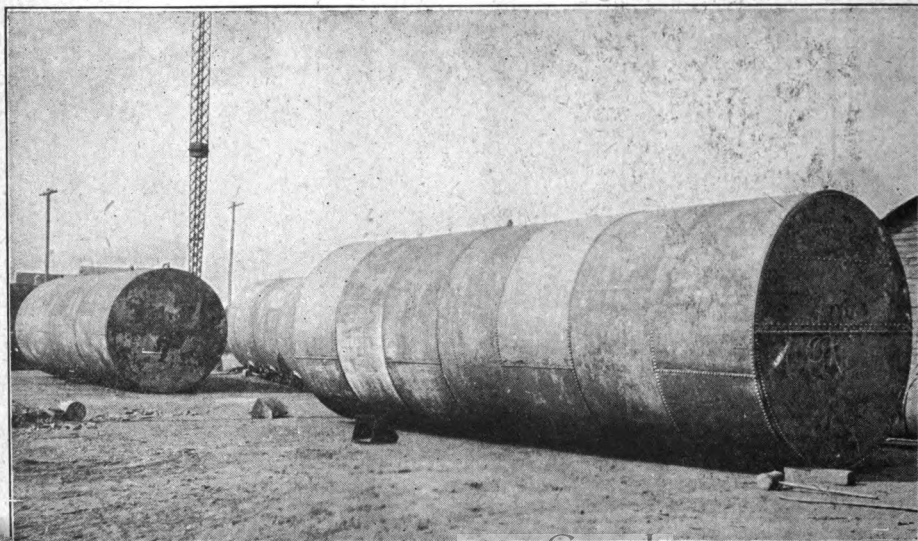


**They Said It Couldn't Be Done But
"Chicago Pneumatic" Tools
Fooled Them.**

An interesting job was recently completed by the Johnson and Barry Steel Company, North Birmingham, Ala. This enterprising Southern firm undertook a repair job that had been declared by several experts to be impossible. To get an idea of what this firm was up against and how well they succeeded, take a look at the "before" and "after"

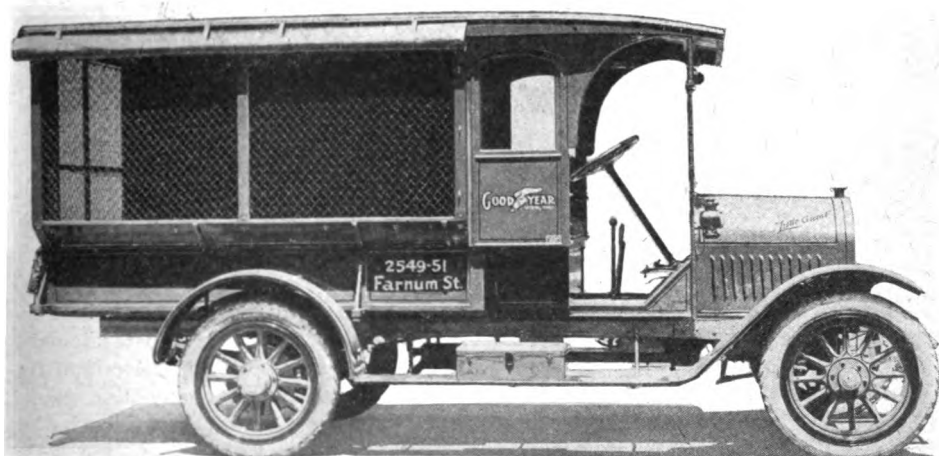
pictures on this page.

Little Giant drills and Boyer riveters and rivet busters were used in repairing 12 large oil tanks 30 ft. long 10 ft. diameter. They were all burnt iron, melted, bursted in spots, having been warped by the huge fire of the Texas Oil Company's plant. The tanks had to be cut completely apart, straightened and every rivet cut and re-riveted with a Boyer hammer. All bursted iron was renewed, of course.





Apparently there is no end to the ways in which the Boyer Hammer can be used by ingenious contractors to cut costs. Here are two Boyer Hammers being used to clean paving brick. By hand these two men were only able to clean about 180 bricks per day, but with the Boyer Chipping Hammer the three men are cleaning an average of 3,000 bricks per day. The work is under the direction of R. P. Burnett, Contractor, Cleveland, Ohio.



A Little Giant owned by the Goodyear Rubber Company. Big business has confidence in Little Giant trucks and Little Giant trucks are making good in big business as well as small. Write for catalogue.



CHARLES B. COATES
Manager Electrical Department Chicago Pneumatic Tool Company

Since President W. O. Duntley, of the Chicago Pneumatic Tool Company, took out his first patents on the air cooled electric drill, the destinies of Duntley Electric Tools have been in the hands of Mr. Charles B. Coates, whose portrait illuminates this page.

A long practical experience in both

mechanical and electrical engineering has especially fitted Mr. Coates for this work. Under his care, the Electrical Department of the company has grown steadily from year to year since its organization about twelve years ago. The capacity of the electric tool factory—at Erie, Pa.—has been so taxed that a large

The Boyer Railway Speed Recorder



With Clock Attachment

Gives valuable, accurate data for the Engineering Departments. It records, graphically, the time at all points during the trip. Insures obedience of "Slow Orders" on the part of the train crew. Shows the performance of the locomotive on grades and curves. Inasmuch as acceleration, negative and positive, can readily be figured from the chart, it proves a reliable instrument for getting train resistance. Through the acceleration it is a simple matter to ascertain if the power is overloaded, which assists in tonnage adjustment.

SEND FOR BULLETIN 263

CHICAGO PNEUMATIC TOOL COMPANY

1014 Fisher Bldg.

52 Vanderbilt Ave.

CHICAGO

NEW YORK

Branches Everywhere

addition has just been built to take care of the rapidly increasing business.

The development of the portable electric tool to its present high stage of efficiency, has called for much talent in both engineering and merchandising, and it is safe to say there is no man in this country, today, who is better posted in the comparatively new field of portable electric tool engineering than is Mr. Coates.

Uncomfortable Honors.

In 1862, an intimate friend of Mr. Lincoln's visited him in Washington, finding him rather depressed in spirits as the result of the reverses repeatedly suffered by the Federal troops.

"This being President isn't all it is supposed to be, is it, Mr. Lincoln?" asked his visitor.

"No," flashed Lincoln with twinkling eyes; "I feel like the Irishman, who, after being ridden on a rail, said: 'If it wasn't for the honor av th' thing I'd rather walk.'"

Consider The Hazard!

His Mother—"Here's an advertisement for a boy. You must look into it, John. 'Wanted—Boy for grocery, to work partly inside and partly out.'"

Jobless John—"Huh! What d'ye take me for, anyhow? What if somebody'd slam the door while I was at work?"

Both Satisfied.

A man down in Missouri put his hand in a mule's mouth to see how many teeth the mule had. The mule closed his mouth to see how many fingers the man had, and the curiosity of both man and mule was satisfied.

The teacher was hearing the history lesson, which dealt with the career of George Washington. Turning to one of the scholars, she asked: "James, what was Washington's farewell address?"

James arose with a promptitude that promised well for his answer. "Heaven, ma'am," he said.



No. 2 Duntley Electric Drill screwing pins in cross arms for Narragansett Electric Lighting Company, Providence, R. I., the holes having previously been bored with No. 0 Duntley Electric Drill.

Novel Uses for Duntley Electric Drills.

The Narragansett Electric Lighting Company, of Providence, R. I., manufactures its own cross-arms, and the greater part of the work is done with Duntley Electric Tools. The idea of using portable electric tools for this purpose originated with the Storekeeper, Mr. J. M. Stuart, who has worked out a process of manufacture that is interesting in showing the wide field for portable electric tools, and the many processes for which they may be utilized. A brief description of the work follows:

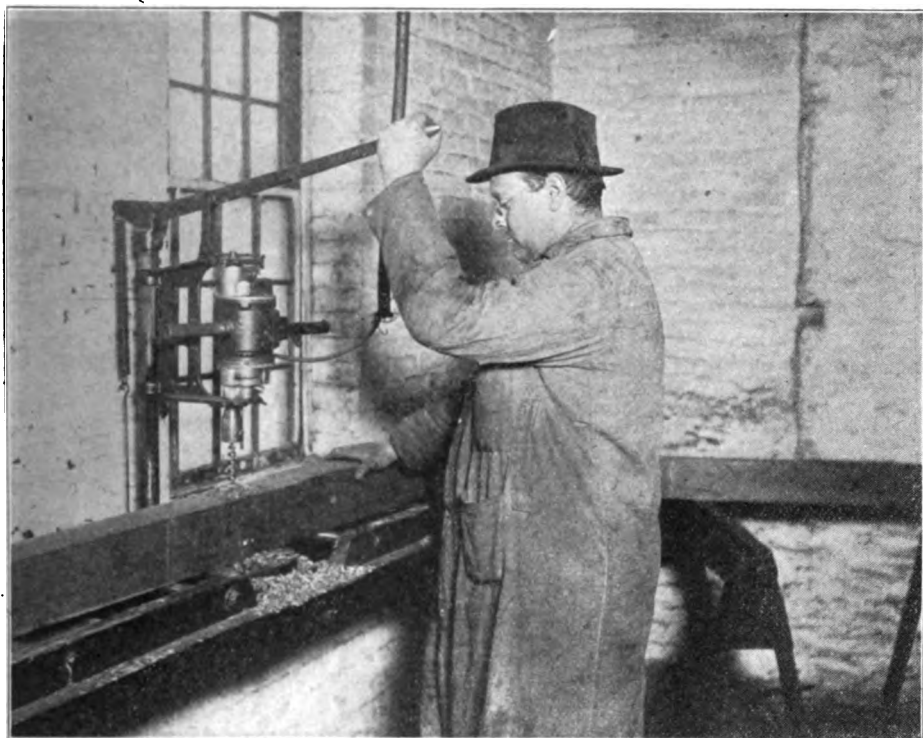
The cross-arms of 4x5 hard pine lumber, sawed and planed on all sides, are brought in, marked, and $\frac{1}{8}$ " holes are bored with a No. 0 Duntley Electric Drill mounted on stand as illustrated. These holes are bored $3\frac{1}{2}$ " deep. The cross-arm then goes to a buzz planer to be chamfered off. The pins are next applied. This is done with a No. 2 Duntley Electric Reversible Drill. The cross-arm

is then painted two coats with a Pneumatic Painting Machine.

A $2\frac{1}{8}$ " hole is then bored in side for mounting on pole with through bolt. Also $2\frac{3}{8}$ " holes in ends to prevent arms from splitting, and $2\frac{3}{8}$ " holes to hold braces. All of this is done with Duntley Electric Drills, and by their use the cost of this work has been reduced to one-third of what it was formerly.

The Narragansett Electric Lighting Company manufacture their own arms for the following reasons:

They can select best quality of long leaf yellow pine free from shakes and unsound knots. They put up nothing but a safe arm. They chamfer best side of the arm to make solid base for pins, whereas, the ordinary manufactured arm is invariably chamfered on the poor side. The arms as manufactured by them last from 15 to 20 years. The cost is reduced and cross-arms are produced in accordance with their own specifications.



Showing Use of Duntley Electric Drill and Drilling Stand in Manufacture of Cross Arms for the Narragansett Electric Lighting Company, Providence, R. I.

You Lie!

In the street of life, walking in the darkness of the shadow, hungry old Satan was out hunting with his dogs, the little imps of human weakness.

A man came walking down life's street. Satan said to the little imp, with a bitter face: "Go get him for me."

Quickly the imp crossed the street, silently and lightly hopped to the man's shoulder. In his ear he whispered: "You are discouraged."

"No," said the man, "I am not discouraged."

"You are discouraged."

The man replied this time: "I do not think I am."

Louder and more decidedly the little imp said: "I tell you, you are discouraged."

The man dropped his head and replied: "Well, I suppose I am."

The imp, hopping back to Satan, said

proudly: "I've got him, he is discouraged."

Another man passed. Again old Satan said: "Get him for me."

The proud little demon of discouragement repeated his tactics. The first time he said, "You are discouraged," the man replied emphatically: "No!"

The second time the man replied: "I tell you I am not discouraged."

The third time he said: "I am not discouraged. You lie."

The man walked down the street, his head up, going toward the light.

The imp of discouragement returned to his master crestfallen. "I couldn't get him. Three times I told him he was discouraged. The third time he called me a liar and that discouraged me."

The child is indeed father to the man; the former builds houses of blocks and the latter builds a block of houses.

In Charge of the Engineers

By WM. H. WOODWELL

Half a point, half a point,
Half a point upward,
Seeking efficiency,—

All of one hundred.
Forward the engineers,
Brilliant are their careers,
Seeking the maximum,
Seeking one hundred.

Forward the engineers!
Never a man dismayed
Even though others
Have stumbled and blundered.
Theirs is to reason why
Charges and costs are high,
Theirs is to do or die,
Seeking one hundred.

Meters to right of them,
Gauges to left of them,
Readings in front of them,
Tabled and charted.
Working on curves and plots,
Formulas, ohms and watts,
Finding the wasteful spots;
Never faint-hearted.

Problems to right of them,
Problems to left of them,
Problems before them;
We have all wondered,
If they can scale the peak,
Stopping each waste and leak,
Attaining the goal they seek,
Reaching one hundred.

Where can their glory fade,
Oh, the advance they made!
Steady progression.
Honor the part they played,
Honor the gain they made;
Noble profession.



This is a view of a Model 16 Two-Ton Little Giant Truck owned by B. B. Bowden, of Seaford, Delaware. It is loaded with 1,700 feet of 9'x8" lumber, weighing 3½ pounds to the square foot, and has just arrived from Mr. Bowden's sawmill located six miles in the country. Mr. Bowden's son Herman is at the wheel and Raymond F., another son, is sitting on the load.

Queer Girls.

A modest girl is Dolly Denn.

As shy as can be found;

She won't take off her glasses when

There is a man around.

—Cincinnati Enquirer.

The modesty of Fanny Fee

Leaves Dolly's far behind.

For if a man is looking she

Won't even change her mind.

—Detroit Free Press.

What would you say of Kitty Cooke?

Her plight was most distressing.

She feared to serve her salad, lest

Her guests would see her dressing.

—Auto-Suggestion.

Innocent Ida of Oneida

Who never did things by halves

Couldn't abide a bareback rider,

Nor the stock show's display of calves.

W. P. P.—Ideal Power.

Ever Feel That Way?

"Waiter!—hic—bring me a dish of prunes."

"Stewed, sir?"

"Now, thash none yer bizness."

Periodicals.

"Do you take any periodicals?" asked the minister on his first round on parish visit.

"Well, I don't," replied the woman, "but my husband takes 'em 'frequent. I do wish you'd try to get him to sign the pledge."

"Well, Myrtle, I'm leaving the house in your charge. I only hope I'll find it all right when I return this evening."

"I sincerely trust so, Madam, for I should hate to think of your being in a condition where you couldn't."—Puck.

Some Doubt About It.

"Mamma, is papa goin' to die an' go to heaven?"

"Why, Willie, what put such an absurd idea into your head?"

"How it is, Pat, that your friend Murphy is out of jail?"

"Faith, an' the man that he killed got well."



Rosy futures seldom grow on purple pasts.

When a man is selfish he shows himself a poor judge of men.

Good opportunities are lost to the lover who knows not how to embrace them.

Tell a girl that you are interested in her and she will find it hard to blame you.

The smaller the woman the easier it is for her to twist a big man around her finger.

A charitable speech does little credit to a man who is afraid to put his hand in his pocket.

After a politician has been dead thirty or forty years he is sometimes referred to as a statesman.

It is more blessed to give than to receive, but the majority of us know it merely from hearsay.

When the right girl meets the right man there is not much more to be said except by the minister.

A poet has been known to make dollars out of lines that ordinary mortals could not make sense out of.

Some men want the earth, but the sloppy merchant is usually satisfied if allowed to appropriate the sidewalk.

Few collisions occur on the path of virtue.

Love and strong drink make the world go round.

A man may have a lofty aim and still be a poor shot.

Too many men salt away money in the brine of other people's tears.

Few women could get into heaven on the testimony of their dressmaker.

Good qualities are jewels that only good breeding can set off to advantage.

There is more power in kindness than there is in dynamite, but it takes longer to develop it.

Adam owned the earth at one time. His experience should be a warning to those who want it now.

Nothing makes some men feel more important than their ability to answer the questions of a small boy.

Humanity is unequally divided between those who can't stand prosperity and those who can't get any to stand.

It keeps wives as busy providing things for the inner man as it does husbands in providing things for the outer woman.

It might be well to remember that the lengthening of the days doesn't prolong the reckoning of a thirty days' obligation.

The Chicago Pneumatic Tool Co.

MANUFACTURERS OF THE FOLLOWING

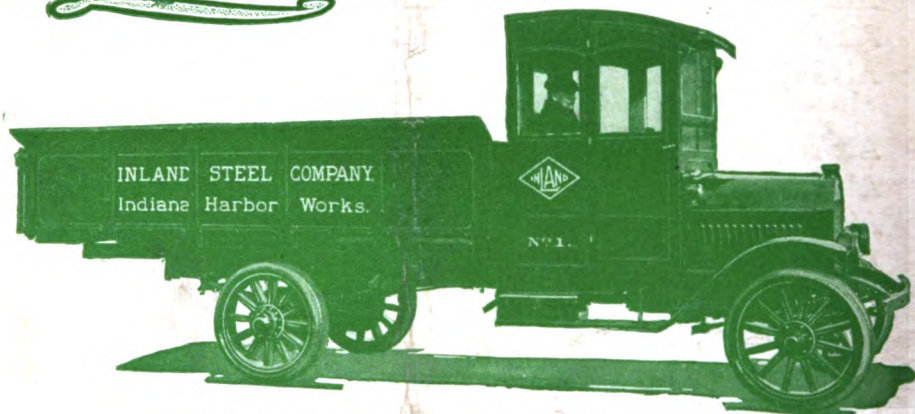
PNEUMATIC TOOLS, APPLIANCES, ETC.

After Coolers	Hammer Drills, Electric
Air Compressors	Hammer Drills, Pneumatic
Air Injectors	Hammers, Riveting
Air Motors	Hammers, Chipping and Calking
Air Receivers	Hammers, Stone
Air Jacks	Hoists, Duntley Electric
Air Lifts	Hoists, Pneumatic Geared
Airoilene Oil	Hoists, Straight Lift
Airoilene Grease	Holders-on
Angle Gears, Boyer	Hose, Special High Grade
Automatic Oiling Devices	Hose Clamp Tool
Chucks, Drill	Hose Couplings (Univ'sal)
Chucks, Expanding	Inter-Coolers
Commercial Car	Motor Trucks
Cranes	Oil Driven Compressors
Drift Bolt Drivers	Oil Engines
Drills, Boyer	Railway Motor Section Cars
Drills, Hummer Hammer	Reamers
Drills, Keller	Rivet Busters
Drills, Little Giant	Riveters, Jam
Drills, Rock	Riveters, Yoke
Drilling Stands	Riveters, Compression
Elevators	Sand Rammers
Electric Drills, Duntley	Speed Recorders
Electric Grinders, Duntley	Staybolt Chucks
Gas Engines	Stone Dressers
Gasoline Driven Com- pressors	Water Lift Pumps
Gasoline Engines	Winches, Portable
Grinders, Portable Electric	

BIG BUSINESS

USES

"Little Giant" MOTOR TRUCKS



Little Giant Two-Ton Truck owned by Inland Steel Company

MANY of the largest business concerns in the United States are using Little Giant Motor Trucks. Such firms as the Standard Oil Co., New York Central R. R., Burroughs Adding Machine Co., Inland Steel Co. and Goodyear Tire Co. have selected the Little Giant because it proved in rigid, competitive tests, embracing nearly every well-known make of truck, to be the most economical, dependable and enduring truck on the market.

The *"Little Giant"* Line

Convert-a-Car (converts a Ford into a One Ton Truck)
Model 15—One Ton Worm Drive
Model 16—Two Ton Worm Drive
Model 17—3½ Ton Worm Drive
Model 18—Five Ton Worm or Chain Drive

WRITE FOR CATALOGUE

Chicago Pneumatic Tool Company

BRANCHES EVERYWHERE

LITTLE GIANT BUILDING, 1615 MICHIGAN AVENUE, CHICAGO

IDEAL POWER



JULY, 1917

A MONTHLY MAGAZINE
PUBLISHED BY THE
**CHICAGO PNEUMATIC
TOOL CO.** CHICAGO NEW YORK

Chicago Pneumatic Tool Company

General Offices, Fisher Bldg.
CHICAGO

Eastern Offices, 52 Vanderbilt Ave.
NEW YORK

BRANCH OFFICES

BOSTON: 185 Pleasant Street
BIRMINGHAM: 834 Brown-Mary Bldg.
BUFFALO: 503 Ellicott Square Bldg.
CINCINNATI: 1008 Mercantile Lib. Bldg.
CLEVELAND: 1241 E. 49th St.
CLEVELAND: 2122 Euclid Ave.
DETROIT: 2nd Ave. and Amsterdam St.
DULUTH, MINN: Torrey Bldg.
EL PASO: 303 San Francisco St.
ERIE, PA.: 12th and Cranberry
FRANKLIN, PA.: No. 13th St.
JOPLIN, MO.: 308 Wall St.
LOS ANGELES: 241-43 S. Los Angeles St.
LOS ANGELES: 925 Title Insurance Bldg.
MILWAUKEE, WIS.: 1310 Majestic Bldg.
NEW ORLEANS: 513 Carondelet St.
OMAHA: 1018 Douglas St.
PHILADELPHIA: 1740-42 Market St.
PITTSBURGH: 10 and 12 Wood St.
PORTLAND, ORE.: 46-48 Front St.
RICHMOND, VA.: 1004 Mutual Bldg.
SALT LAKE CITY: 117-19 W. 2nd So. St.
SEATTLE: 122 King St.
ST. LOUIS: 813-19 Hempstead St.
ST. PAUL: Pioneer Bldg.
SAN FRANCISCO: 71 First St.

FOREIGN

Canada: { Montreal, **Canadian Pneumatic Tool Co.**
The Holden Co., Ltd., Montreal, Toronto, Winnipeg.

British Columbia: Vancouver, Holden Co., Ltd., 542 Pendar Street, West.

Mexico: Mexico City, The General Supply Co., Av. Isabel La Catolica, No. 51.

Northern Mexico: (Sonora and Chihuahua), Don A. Carpenter & Co., El Paso, Texas.

Great Britain: { London, **The Consolidated Pneumatic Tool Company,**
Spain: Ltd., 9, Bridge Street, Westminster, S. W

Portugal: }

France: Paris, Anciens Etablissement, Glaenzer & Perreaud, 18-20 Faubourg du Temple.

Belgium: Brussels, The Consolidated Pneumatic Tool Co., Ltd., 22 Chaussee de Forest, Porte de Hal.

Italy: Milan, The Consolidated Pneumatic Tool Co., Ltd., via A. Capellini 7.

Norway: {

Sweden: { G. Hartmann, P. O. Box 1, Christiania, Norway.

Denmark: }

Russia: Petrograd; Phoenix Engineering Works Co., Ltd., Polustrovskaya. Quay No. 39.

India: Bombay, **Consolidated Pneumatic Tool Co., Ltd.**, Rampart Row, Fort.

Japanese Empire: Tokyo, Osaka, Seoul, Dairen, The F. W. Horne Co.

Philippine Islands: Manila, Frank L. Strong Mach. Co., 64-68 Calle Echague.

Australia: Sydney, Henry W. Peabody & Co.

New Zealand: Wellington, Henry W. Peabody & Co.

South America: { General Sales Agents, International Railway Supply

Central America: { Co., 30 Church St., N. Y.

South America: Buenos Aires, Argentina, Evans, Thornton & Co.

South Africa: { Johannesburg, The Consolidated Pneumatic Tool Co., Ltd., 190 Main Street.

Cuba, Havana: J. F. Berndes Co., Box 349.

Hawaiian Islands, Honolulu: H. S. Gray & Co., 832 Fort St.

BULLETIN DIRECTORY

Requests for these Bulletins should be directed to our Chicago or New York offices or to our nearest branch as shown on inside front cover.

PNEUMATIC TOOLS

- 121...Pneumatic Hammers and Foundry Appliances.
- 124...Pneumatic Riveting, Chipping, Calking and Stone Hammers.
- 125...Pneumatic Yoke, Jam and Shell Riveters, Holders-on, Drift Bolt Drivers, Rivet Busters.
- 127...Pneumatic Drills, Corner Drills, Reamers, Wood Boring, Flue Rolling and Tapping Machinery and Grinders.
- 128...Miscellaneous equipment for Pneumatic Drills, viz: Chucks, Twist Drills, Reamers, Augers, Flue Cutters, Flue Expanders, Angle Gears.
- 129...Hose, Hose Couplings and Hose Clamp Tools.
- 130...Lubrication of Pneumatic Tools.
- 132...Pneumatic Motors and Pneumatic Geared Hoists.
- 133...Cylinder Air Hoists and Jacks.
- 296...Special E, ER, and ERC Little Giant Drills.

ELECTRIC TOOLS

- E-39...Duntley Electric Grinders.
- E-41...Duntley Electric Tools for Street and Interurban Railways.
- E-42...Universal Electric Drills.
- E-43...Duntley Universal Electric Hammer Drill.
- E-44...Duntley Electric Sensitive Drilling Stand.
- E-45...Duntley Portable Electric Hoists.
- E-46...Duntley Heavy Duty Electric Drills—Direct Current.
- 233...Duntley Electric Tool Booklet.

AIR COMPRESSORS AND FUEL OIL ENGINES

- 34-A...Class "G" Steam Driven "Chicago Pneumatic" Compressors.
- 34-C...Erecting and Operating Instructions for Class A-G Giant Gas Engines.
- 34-E...Instructions for Installing and Operating Class N-SG Gas Driven Air Compressor.
- 34-F...Design and Construction Class "G" "Chicago Pneumatic" Compressors.
- 34-G...Air Receivers, Aftercoolers, Reheaters, etc.
- 34-H...General Instructions for Installing and Operating "Chicago Pneumatic" Compressors.
- 34-I...Instructions for Installing and Operating N-SS and N-SB Compressors.
- 34-J...Instructions for Installing and Operating Class O Compressors.

- 34-K...Class N-SO and N-SG Fuel Oil and Gas Driven Compressors.
- 34-L...General Pneumatic Engineering Information.
- 34-M...Class "O" "Chicago Pneumatic" Steam and Power Driven Compressors.
- 34-N...Class N-SS and N-SB Single Enclosed Compressors.
- 34-O...Instructions for the Installation and Care of "Chicago Pneumatic" Gasoline Driven Air Compressors.
- 34-Q...Giant A-O Fuel Oil Engine Applications.
- 34-S...Small Power Driven Compressors.
- 34-U...Instructions for Installing and Operating Class N-SO Fuel Oil Compressors.
- 34-V...Instructions for Installing and Operating Giant Fuel Oil Engines.
- 34-W...Class A-O Fuel Oil Engines.
- 34-X...Class A-G Gas and Gasoline Engines.
- 34-Y...Class N-SG Gas and Gasoline Driven Compressors.
- 34-Z...Class N-SS Automatic Steam Driven Compressors.
- 213...Simplat Flat Disc Valves.
- 224...Compressor Booklet.
- 281...Giant Fuel Oil Gas and Gasoline Engine Application Folder.

ROCK DRILLS AND HAND DRILLS

- 137...Chicago Giant Rock Drills.
- 148...Chicago Valveless Hand Drills.
- 149...Chicago Portable Mine Hoist.
- 150...Chicago Coal Drills.
- 151...Chicago Slogger Rock Drills.
- 152...Chicago Gatling Drills.
- 153...Chicago Sinker.
- 154...Chicago Stoper.
- 172...Chicago Plug and Feather Drill.
- 192...Stone Tools, etc.
- 216...Hammer Hammer Drills.

LITTLE GIANT TRUCK

- 285...Catalogue.
- 287...Little Giant Convert-a-Car Circular.
- 298...Little Giant in the Lumber Business.
- 299...Duntley Hydro-Pneumatic Gas Generator on Model 16 Little Giant Truck.
- 306...Little Giant in the Transfer, Storage and Moving Business.

ROCKFORD and MISCELLANEOUS

- 263...Boyer Speed Recorder.
- 266...Rockford Railway Motor Car.
- 117...Lubrication of Rockford Cars.
- 119...Operation of Rockford Cars.
- 251...Chicago Pneumatic Water Lift Pump.

CHICAGO PNEUMATIC TOOL COMPANY

1014 Fisher Bldg., CHICAGO

Branches Everywhere

52 Vanderbilt Ave., NEW YORK

When writing to advertisers please mention Ideal Power.

CONVENTIONS.

August 5-11, 1917—Universal Craftsman Council of Engineers, at Toledo, Ohio.
 August 21-23, 1917—International Railroad Master Blacksmiths' Association, at Chicago, Ill.
 August 30—September 1, 1917—American Railway Tool Foremen's Association, at Hotel Sherman, Chicago, Ill.
 September 4-7, 1917—International Railway General Foremen's Association, at Hotel Sherman, Chicago, Ill.
 September 10-15, 1917—National Association of Stationary Engineers, Evansville, Ind.
 September, 1917—The Traveling Engineers' Association, Chicago, Illinois.
 September 10-15, 1917—International Union of Steam & Operating Engineers, Cleveland, Ohio.
 September 18, 19 and 20, 1917—Railway Signal Association, at Hotel Traymore, Atlantic City, N. J.
 September 18-21, 1917—Roadmasters and Maintenance of Way Association of America, at Hotel Auditorium, Chicago, Ill.
 September 24, 1917—American Institute of Metals, at Boston, Mass.
 September 24, 1917—American Foundrymen's Association, at Boston, Mass.
 October 16-18, 1917—Maintenance of Way Master Painters' Association of United States and Canada, Cleveland, Ohio.
 October 16-18, 1917—American Railway Bridge and Building Association, at St. Paul, Minn.

ENGINEERING SOCIETIES, ETC.

American Association of Railroad Superintendents (General)—General Secretary, E. H. Harman, St. Louis, Mo.
 American Electro-Platers Society—President, H. H. Williams, St. Louis, Mo.; Secretary-Treasurer, Walter Fraine, 507 Grand Avenue, Dayton, Ohio.
 American Highway Association, Colorado Bldg., Washington, D. C.
 American Institute of Electrical Engineers—President, H. W. Buck, 49 Wall St., New York; Secretary, F. L. Hutchinson, 33 W. 39th St., New York.
 American Institute of Mining Engineers—Secretary, Bradley Stoughton, 29 W. 39th St., New York City.
 American Mining Congress—Secretary, J. F. Calbreath, Jr., 743 Munsey Bldg., Washington, D. C.
 American Order of Steam Engineers—Supreme Chief Engineer, J. W. Patrent, Philadelphia, Pa.; Supreme Corresponding Engineer, Edw. A. Reboul, 1110 Earl St., Philadelphia, Pa.
 American Railway Engineering Association—Secretary, E. H. Fritch, 1011 Karpen Bldg., Chicago, Ill.
 American Road Builders' Association—Secretary, E. L. Powers, 150 Nassau St., New York.
 American Society of Civil Engineers—Secretary, Chas. Warren Hunt, 220 W. 57th St., New York City.
 American Society of Engineering Contractors (Inc.)—Secretary, J. R. Wemlinger, South Perry Bldg., New York City. Meetings: Second Thursday, every month.
 American Society of Heating and Ventilating Engineers—Secretary, C. W. Obert, 29 W. 39th St., New York City.
 American Society of Mechanical Engineers—Secretary, Calvin W. Rice, 29 W. 39th St., New York City.
 American Society of Naval Engineers—Secretary-Treasurer, Lieut. A. T. Church, U. S. N., Navy Department, Washington, D. C.
 American Water Works Association—Secretary, J. M. Diven, 47 State St., Troy, N. Y.
 Association of Civil Engineers, Cornell University—President, A. F. Williams, Ithaca, N. Y.; Secretary, A. S. Patrick, Ithaca, N. Y.
 Association of Railway Electrical Engineers—Secretary, J. A. Andreucetti, C. & N. W. Ry. Co., Chicago, Ill.
 Boston Society of Civil Engineers—Secretary, S. Everett Tinkham, 715 Tremont Temple, Boston, Mass.
 Canadian Society of Civil Engineers—Secretary, Clement H. McLeod, 176 Mansfield St., Montreal, Can.
 Canadian Railway Club—Secretary, James Powell, Grand Trunk Ry., Montreal, Que.
 Central Railway Club—Secretary, H. D. Vought, 95 Liberty St., New York.
 Civil Engineers' Society of St. Paul—Secretary, Edw. J. Dugan, Room 7, Old State Capitol Bldg., St. Paul, Minn.
 Cleveland Engineering Society—Secretary, C. E. Drayer, Chamber of Commerce Bldg., Cleveland, Ohio.
 Connecticut Society of Civil Engineers—President, Clarence Blakeslee, New Haven, Conn.; Secretary-Treasurer, J. Frederick Jackson, Box 1304, New Haven, Conn.
 Detroit Engineering Society—Secretary-Treasurer, B. V. Williamson, 1500 David Whitney Bldg., Detroit, Mich.
 Engineering Association of the South—Secretary-Treasurer, W. Harwell Allen, 928 Stahlman Bldg., Nashville, Tenn.
 Engineers' Club of Cincinnati—Secretary, E. A. Gast, P. O. Box 333, Cincinnati, Ohio.
 Engineers' Club of Minneapolis—President, L. S. Gillette, 74 Chamber of Commerce, Minneapolis, Minn.; Secretary, Louis Clousing, 2411 Oakland Ave., Minneapolis.
 Engineers' Club of Philadelphia—Secretary, R. H. Fernald, 1317 Spruce St., Philadelphia, Pa.
 Engineers' Club of St. Louis—Secretary, W. W. Horner, 5203 Maple Ave., St. Louis, Mo.
 Engineering Society of Purdue University, Lafayette, Ind.—Secretary, C. B. Penrod, 123 State St., W. Lafayette, Ind.
 Engineering Society of Buffalo—President, John Younger; Secretary, W. J. Gamble, 247 Rano St., Buffalo, N. Y.
 Engineers' Society of Pennsylvania—Secretary, E. R. Dasher, 31 S. Front St., Harrisburg, Pa.
 Engineers' Society of Northeastern Pennsylvania—Secretary, T. F. McKenna, care of Engineers' Club, Scranton, Pa.
 Engineers' Society of Western Pennsylvania—Secretary, Elmer K. Hiles, 2511 Oliver Bldg., Pittsburgh, Pa.
 Illinois Society of Engineers—Secretary, E. E. R. Tratman, Wheaton, Ill.
 Indiana Engineering Society—Secretary, Chas. Brossman, Indianapolis, Ind.
 International Railway Congress Association—President (of the International Commission), W. Toudeller, 11 Rue de Louvain, Brussels, Belgium; Secretary, General L. Weissenbruch, same address.
 Iowa Engineering Society—Secretary-Treasurer, Prof. J. H. Dunlap, Iowa City, Iowa.
 Lake Superior Mining Institute—Secretary, A. J. Yungbluth, Ishpeming, Mich.
 Louisiana Engineering Society—President, Samuel Young, Secretary, W. T. Hogg, P. O. Sta. 20, New Orleans, La.
 Michigan Engineering Society—President, Geo. W. Bissell, East Lansing, Mich.; Secretary, Samuel J. Hoexter, Kalamazoo, Mich.
 Montana Society of Engineers—President, Martin H. Gerry, Jr., Helena, Mont.; Secretary, Clinton H. Moore, Butte, Mont.
 National Electric Light Association—Secretary, H. G. McConaughy, 29 West 39th St., New York City, N. Y.
 New England Association of Commercial Engineers—President, F. S. Eggleston, Jr., 53 Devonshire St., Boston, Mass.; Secretary, Jaa. F. Morgan, 53 Devonshire St., Boston, Mass.
 New England R. R. Club—Secretary, W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass.
 New York Railroad Club, Secretary, Harry D. Vought, 95 Liberty St., New York, N. Y.
 Ohio Engineering Society—President, Clyde T. Morris, O. S. U. Columbus, Ohio; Secretary, Jno. Laylin, Norwalk, Ohio.
 Ohio Society of Mechanical, Electrical and Steam Engineers—Secretary-Treasurer, Frank E. Sanborn, Ohio State University, Columbus, Ohio.
 Railway Club of Pittsburgh—Secretary, J. B. Anderson, Room 207, Penn. R. R. Station, Pittsburgh, Pa.
 Richmond Railroad Club—Secretary, F. O. Robinson, C. & O. Railway, Richmond, Va.
 Rochester Engineering Society—Secretary-Treasurer, F. C. Taylor, 34 Clinton Ave. North, Rochester, N. Y.

St. Louis Railway Club—Secretary, B. W. Fraenthal, Union Station, St. Louis, Mo.
Southern & Southwestern Railway Club—Secretary, A. J. Merrill, Grant Bldg., Atlanta, Ga.

Toledo Society of Engineers—President, L. M. Gram, 1047 Spitzer Bldg., Toledo, O.; Secretary, L. T. Owen, 1047 Spitzer Bldg., Toledo, O. Regular meeting, second Friday in each month.

Utah Society of Engineers—Secretary, Hugh C. Ellis, Capitol Bldg., Salt Lake City, Utah. Third Wednesday of each month, except July and August.

Vermont Society of Engineers—Secretary, Geo. A. Reed, Montpelier, Vt.

Western Railway Club—Secretary, J. W. Taylor, 1112 Karpen Bldg., Chicago, Ill.

Western Society of Engineers—President, B. E. Grant, 207 City Hall, Chicago; Secretary, E. N. Layfield, 1735 Monadnock Bldg., Chicago.

MECHANICAL AND TRADE SOCIETIES.

Air Brake Association—Secretary, F. M. Nelson, 3014, 165 Broadway, New York, N. Y.

American Boiler Manufacturers' Association—President, M. H. Broderick, Muncie, Ind.; Secretary, H. N. Covell, Lidgerwood Mfg. Co., Dikeman St., Brooklyn, N. Y.

American Electric Railway Association—Secretary-Treasurer, E. B. Burrill, 8 W. 40th St., New York City.

American Electric Railway Association—Secretary, Fred C. J. Dell, 165 Broadway, New York City.

American Foundrymen's Association—Secretary, A. O. Backert, 12th and Chestnut Sts., Cleveland, Ohio.

American Institute of Metals—Secretary-Treasurer, W. M. Corae, 106 Morris Ave., Buffalo, N. Y.

American Railway Association—General Secretary, J. E. Fairbanks, 75 Church St., New York City.

American Railway Bridge and Building Association—President, C. E. Smith, 2073 Railway Exchange, St. Louis, Mo.; Secretary-Treasurer, C. A. Lichty, C. & N. W. Ry., Chicago.

American Railway Master Mechanics' Association—President, Wm. Schlaefle, G. M. S., Erie R. R., New York, N. Y.; Secretary, J. W. Taylor, Karpen Bldg., Chicago.

American Railway Tool Foremen's Association—Secretary, R. D. Fletcher, Belt Railway of Chicago.

American Road Builders' Association—Secretary, E. L. Powers, 150 Nassau St., New York.

American Supply Men's Association—Secretary, Porter G. Jones, 574 The Bourse, Philadelphia, Pa.

Boiler Makers' Supply Men's Association—Secretary, Geo. Slate, The Boiler Maker, 461 Eighth Ave., New York City.

Canadian Association of Stationary Engineers—Secretary, W. A. Crockett, Mount Hamilton, Ont., Can.

Canadian Roadmasters' Association—Secretary, J. M. Mackenzie, West Toronto, Can.

Car Foremen's Association of Chicago—President, A. La Mar, Master Mechanic, Penn. R. R., Chicago, Ill.; Secretary, Aaron Kline, 841 N. Lawler Ave., Chicago.

General Superintendents' Association of Chicago—Secretary, A. M. Hunter, 321 Grand Central Station, Chicago.

International Railroad Master Blacksmiths' Association—Secretary, A. L. Woodworth, C. H. & D. Ry., Lima, Ohio.

International Railway Fuel Association—Secretary-Treasurer, J. G. Crawford, 702 E. 51st St., Chicago.

International Railway General Foremen's Association—Secretary-Treasurer, Wm. Hall, C. & N. W. Ry., 1061 N. Wabash, Winona, Minn.

International Union of Steam and Operating Engineers—President, Milton Snellings; Secretary-Treasurer, James G. Hannahan, 6334 Yale Ave., Chicago.

Master Boiler Makers' Association—President, D. A. Lucas, G. F. B. M., C. B. & Q. R. R., Havelock, Neb.; Secretary, Harry D. Vought, 95 Liberty St., New York City.

Master Car Builders' Association—President, C. E. Chambers, I. M. P., C. R. R. of N. J., Jersey City, N. J.; Secretary, J. W. Taylor, Karpen Bldg., Chicago, Ill.

Master Car and Locomotive Painters' Association—Secretary, A. P. Dane, B. & M. R. R., Reading, Mass.

Maintenance of Way Master Painters' Association of United States and Canada—Secretary, F. W. Hager, The Denver Road, Ft. Worth, Texas.

National Association of Manufacturers—President, Col. Geo. Pope, Hartford, Conn.; Secretary, Geo. S. Budinot, New York City.

National Association of Stationary Engineers—Secretary, Fred W. Raven, 417 S. Dearborn St., Chicago, Ill.

National Founders' Association—Secretary, J. M. Taylor, Room 842, 29 S. La Salle St., Chicago, Ill.

National Railway Appliances Association—Secretary-Treasurer, C. W. Kelly, 122 S. Michigan Ave., Chicago, Ill.

Purchasing Agents' Association of Pittsburgh—President, E. L. McGrew, Standard Underground Cable Company, Pittsburgh; Secretary, H. E. Harmon, Des Moines Bridge & Iron Works, Pittsburgh.

Railway Equipment Manufacturers' Association—President, F. N. Bard, Barco Brass & Joint Co., Chicago; Secretary, W. E. Brumble, Galena Signal Oil Co., Richmond, Va.

Railway Signal Association—President, C. A. Dunham, Signal Engr., Great Northern Ry., St. Paul, Minn.; Secretary, C. C. Rosenberg, Bethlehem, Pa.

Railway Storekeepers' Association—President, W. A. Summerhays, G. S. K., I. C. R. R., Chicago, Ill.; Secretary, J. P. Murphy, Box C, Collinwood, Ohio.

Railway Supply Manufacturers' Association—Secretary-Treasurer, J. D. Conway, 2136 Oliver Bldg., Pittsburgh, Pa.

Roadmasters' and Maintenance of Way Association—Secretary, P. J. McAndrews, C. & N. W. Ry., Sterling, Ill.

Traveling Engineers' Association—Secretary W. O. Thompson, care of General Offices, N. Y. C., Cleveland, Ohio.

Universal Craftman Council of Engineers—Secretary Thos. H. Jones, Cherrydale, Alexandria County, Va.

Sometimes.

If times are hard, and you feel blue,
Think of the others worrying, too;
Just because your trials are many,
Don't think the rest of us haven't any.
Life is made up of smiles and tears,
Joys and sorrows, mixed with fears;
And though to us it seems one-sided,
Trouble is pretty well divided.
If we could look in every heart,
We'd find that each one has its part,
And those who travel fortune's road,
Sometimes carry the biggest load.

Mrs. Youngbride—"I want to get a hat for my husband. It's to be a surprise for him."

Clerk—"What size, madam?"

Mrs. Youngbride—"Really, I forgot to find out. But he wears a fifteen collar, so I suppose he'd want twenty or twenty-two in a hat, wouldn't he?"—Ex.



"CLEVELAND" Bridge Reamers

will take heavy cuts and work under trying conditions

Always Dependable

The CLEVELAND Twist Drill Co.

New York

CLEVELAND

Chicago

NECESSITIES

High Grade Rubber Goods
Fire Hose
Reels, Nozzles
Fire Hose Carts
Rubber Cement
P. & W. Rubber Preservative
Rubber Boots
Leather-Soled Rubber Boots

Leather Belting
Upholsterer's Leather
Leather and Silk Fringes
Vestibule Diaphragms
Gimp
Brass Nails
Leather Head Nails

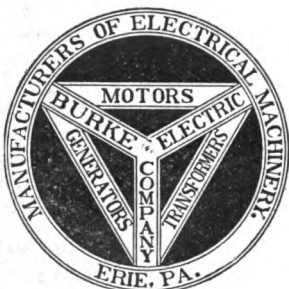
Signal Flags
Bunting
Linoleum
Cab Cushions
Cab Curtains
Track Jacks
Economy Soap Stock
Nut Locks

GUILFORD S. WOOD

Great Northern Building,

CHICAGO, ILLINOIS

MOTORS



For All Purposes

Where Reliable

Power is Essential

**ALL SIZES ALL SPEEDS
ALL VOLTAGES**

Direct and 2 or 3 Phase Alternating Current

BURKE ELECTRIC COMPANY
ERIE, PA.

Sales Offices in All Principal Cities

IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances and Motor Trucks
By THE IDEAL POWER PUBLISHING COMPANY
Fisher Building, Chicago

VOL. XII

JULY, 1917

No. 5

SAVING THE NATION \$500,000,000

From the New York World

"Five hundred million dollars is a conservative estimate of the annual saving, according to experts, to the owners of automobiles (pleasure cars and trucks), effected by the Duntley Hydro-Pneumatic Gas Generator," says the New York World. "This device is being placed on the market at a most opportune time. It will bring an enormous saving to the nation without realizing this vast sum is accumulating in the pockets of the users of pleasure cars and trucks. This gas generator enables the use of low grade fuels such as kerosene, with greater resultant power than that derived from gasoline alone. It handles this low-grade fuel with absolutely perfect combustion, eliminates carbon deposit; there is an absence of any gaseous odor or smoke or vapor. The motor operates on a superheated hydrogen and carbon-monoxide gas of unknown chemical analysis. The mixture, however, is known beyond doubt to possess very high heat units, which increases the power of the motor from 10 per cent to 15 per cent, depending upon the condition of the motor.

No vaporized fuel enters the cylinders and, in consequence there is nothing to carbonize or to work past the piston rings and deteriorate the lubricating oil in the crank case. It will be appreciated

by motorists or owners of trucks, there will be less bearing troubles and the absence of carbon insures perfect seating of the valves. The valves will rarely require grinding in, except at long intervals. Rings, wrist pins and bearings will have lengthened life, and, motor repairs will be reduced to a minimum. The motor runs cooler and spark plugs maintain clean and bright firing points which rarely ever require attention unless a piston ring should break and allow lubricating oil to pass by and into the combustion chamber. The power of the motor is increased from the fact that this new gas does not suddenly explode, but burns and expands behind the piston for its full length of travel, or in other words, duplicates the action of steam.

The fuel mixture becomes superheated and the water and air automatically consumed to harmonize with motor speed becomes, through unique mechanical construction of the generator, a superheated dry steam. The carbon in the superheated fuel having an affinity for steam is instantly absorbed by the superheated steam, and the whole is transformed into high temperature hydrogen gas.

Chemists will appreciate the impossibility of an analysis at the temperature at which the gas enters the explosive



The Little Giant Convert-A-Car, champion of light delivery, combining the economy and reliability of the Ford with the strength and endurance of the Little Giant. A one-ton Ford unit built to truck specifications.

chamber and is exploded, and in consequence its true chemical make-up may never be known definitely. But who cares, so long as the citizens of Uncle Sam are saved the stupendous sum of \$500,000,000 annually? The estimate is conservative and may be twice that sum.

While the Duntley Hydro-Pneumatic Gas Generator is an exclusive feature of Little Giant trucks, it may be used on any make of pleasure car, and those interested in using or marketing of this device are invited to correspond with the Chicago Pneumatic Tool Company.

The Little Giant Convert-a-Car the Only Ford Truck Unit Built in a Motor Truck Factory.

The marvelous growth of the Ford truck unit has been one of the surprises of the automobile industry. Hundreds of thousands of small business men who could never spare the money to purchase a truck of standard make invest in a Convert-a-Car and by buying a Ford pleasure car, either second-hand or new, or utilizing the one they already have, will possess a vehicle that is cheaper than a horse and wagon, is much more convenient, requires less attention and is more economical to maintain. Even large business firms whose loads are uniformly light are investing in Little Giant Convert-a-Cars.

A glance at the specifications of the Little Giant Convert-a-Car illustrates how carefully the Chicago Pneumatic Tool Company planned to maintain its reputation for manufacturing goods of highest quality. Convert-a-Car specifications speak in a convincing manner of super-strength and durability. Axles $2\frac{5}{8} \times 2\frac{5}{8}$ inches, solid forged, high grade carbon steel. Wheels are $34 \times 3\frac{1}{2}$ inches, heavy artillery, second-growth hickory, twelve rectangular spokes. Frame is 4-inch by $5\frac{1}{4}$ -lb. structural steel channel.

An additional feature of the Convert-a-Car is the simple and easy manner of attachment to the Ford car. No mutilation of the Ford car is necessary. The strong steel channel of the Convert-a-Car telescopes the pleasure car frame, to which it is rigidly and simply attached by four bolts, and should the owner decide at any time to re-convert the truck into a pleasure car, it can readily be done, for no parts of the Ford have been cut or altered in any way.

The Styles Again.

Jessie—"How do you like your new dress?"

Bessie—"It falls just a little below my expectations."

Jessie—"I noticed that, too. They are making them awfully short this year!"



A Model H Little Giant in the service of the New York Central Railroad. The short wheelbase of the Model H gives it an advantage in close quarters where turning room is at a premium.

The Little Giant in Railroad Service.

The New York Central Lines use Little Giant trucks at Cleveland (Collinwood), Ohio, and Elkhart, Ind. The official report of the use of one of these trucks at the New York Central (Collinwood) shops at Cleveland says:

"The Little Giant does everything that comes up. If there is a car around the yards that has a small supply of freight, the truck takes care of it rather than switch the car back and forth through the yards. If castings are needed or a ton and a half of material, the Little Giant is employed to do this work. It cuts out hiring three wagons and gives the railroad complete control of the service. It has made itself indispensable because of the many tasks it performs that were not in the first place intended to be a part of its work. All of the supplies for the Cleveland office are brought down from Collinwood on this truck at a marked saving of time and expense."

He Was It.

Bacon—"Your wife told my wife that new silk dress of hers came from a worm."

Egbert — "That's right. I'm the worm!"

Liquor Problem Solved At Last.

"Start a saloon in your own home. Be the only customer (you'll have no license to pay). Go to your wife and give her two dollars to buy a gallon of whisky, and remember there are sixty-nine drinks in a gallon. Buy your drinks from no one but your wife and by the time the first gallon is gone she will have eight dollars to put into the bank and two dollars to start business again.

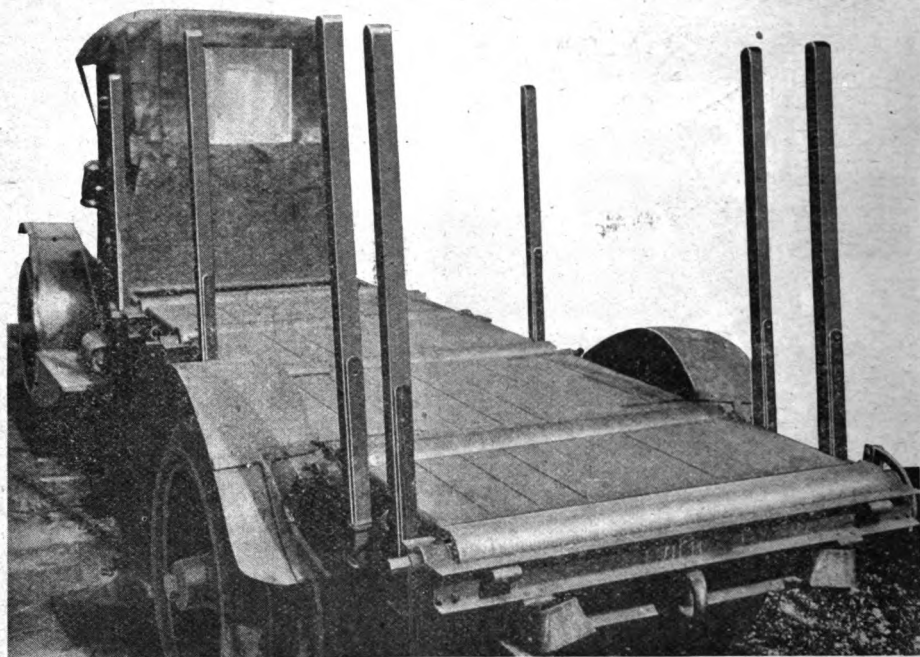
"Should you live ten years and continue to buy booze from her, and then die, with snakes in your boots, she will have enough money to bury you decently, educate your children, buy a house and lot, marry a decent man, and quit thinking about you entirely."

All In Line

The rehearsal was proceeding slowly. The star had several complaints to make, and the manager was losing patience.

Star Actor—I must insist, Mr. Stager, on having real food in the banquet scene.

Manager—Very well, then, if you insist on that you will be supplied with real poison in the death scene.



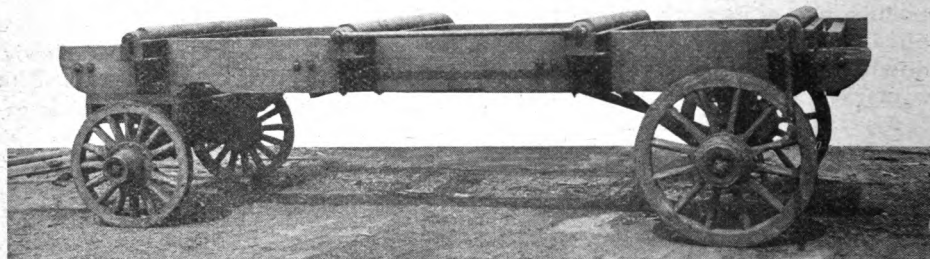
Showing arrangement of rollers constituting a loading and unloading device for motor trucks, fully described in subjoined article.

The Motor Truck in the Lumber Business.

The motor truck is a wonderful efficiency stimulator. It usually makes such astonishing reductions in hauling costs that its owner is aroused to seek ways and means of expeditiously loading and unloading to and from the truck. With a horse and wagon almost any way to get a load on or off is good enough, as a horse outfit can't go far in ten or fifteen minutes and there is not much incentive to try and save its time. But it is a different proposition with the motor

truck. It will haul a lot of goods, a long way, in a remarkably short time and hence with it "time is money."

In the attempt to save the valuable time of trucks many ingenious arrangements have been perfected. Special loading platforms have been constructed, heavy elevators that will lift an entire truck have been built, extra truck bodies have been provided so that while the truck is delivering one load another is being prepared for it, and now the lumber industry gives us the most efficient device of all of them. There may be



Showing Trailer with rollers used to load and unload lumber, fully described in article on "Motor Truck in the Lumber Business."



A one-ton Model H Little Giant owned by the J. E. Byrne Garage, Tyrone, N. Mex., ready to pull out a 3-ton truck of another make which has run into the ditch. Needless to say the powerful Little Giant was successful in getting the ditched machine onto the road. Mr. Byrne has owned his Little Giant for several years and says he is more than pleased with it. Mr. Byrne being in the auto repair business knows, of course, what is what in a truck.

other industries in which this or similar loading devices could profitably be used.

A portable platform (made from an old lumber wagon) is provided with four rollers set in the platform. The rollers are built of steel. The platform or loader, as it is called, is pulled around the yards to the cars or to the lumber pile and the lumber is loaded onto the platform. The rollers are locked by a bar extending between two of them, which prevents the lumber from sliding off. A crank is provided for the rear roller, which enables the load to be shifted or moved off the platform entirely.

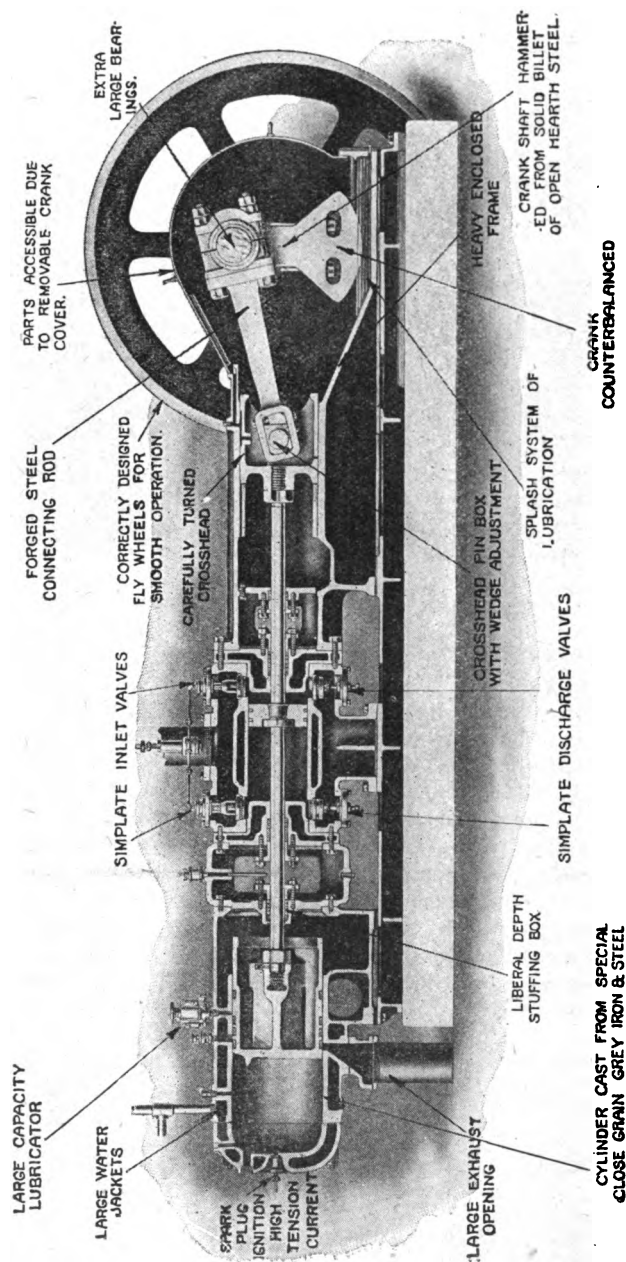
In the platform of the truck body proper five rollers are also set and the platform is the same distance from the ground as the portable platform or loader.

While a truck is delivering a load the portable platform is backed up to a car of lumber and loaded up. The truck upon returning to the yard is backed up to the portable platform. One man then

takes the crank and simply winds the load from the loader onto the truck. The locking device on the rollers holds it securely, but as an added precaution it is also chained.

When the loaded truck reaches the job, the locks and chain are removed and the crank applied at one of the rollers. The load is then backed part way off. A chain is placed around the entire load. A 2x4 is placed crosswise on the ground. The load is again turned off backwards until one end rests upon the ground. Another chain is placed around the lumber at the other end. The truck is driven about two feet ahead and the load drops in a perfect pile. As the load is raised slightly from the ground by the 2x4, the chains are then easily removed. The whole operation takes less time than it does to tell about it. Any lumber wagon in good condition can be made into the portable platform.

Write for the Chicago Pneumatic Tool Company's folder 298 for further data on motor trucks in the lumber business.



Sectional view of Class N-SG Chicago Pneumatic Simplate Valve Gas Driven Compressor,
fully described in Bulletin 34-Y.

Gas and Gasoline Driven Compressors.

The Chicago Pneumatic Simplate valve, inclosed frame, self-oiling, gas and gasoline driven compressors comprising Classes N-SG and N-SGL are designed especially to meet the requirements of shops, mines, quarries and construction projects where ease of management, dependability, and economy of operation are desired. They are particularly suited for the hard service conditions often encountered in connection with the use of rock drills, pneumatic tools, air lift for water and other appliances. A feature is the attractively low first cost, made possible by quantity production.

The compressors are of the horizontal, straight line, single stage, double fly-wheel inclosed frame type and are without delicate or complicated parts. Power and air cylinders are closely connected in tandem. Substantial cast iron sub-bases, oak skids or portable tanks are furnished as desired. Splash lubrication is employed for the main bearings, cross-head guides, wrist pin and crank pin, making the compressor practically self-oiling.

The power cylinder of the N-SG gas driven machine is of an especial design, a valveless, two-cycle type with high tension electric ignition. Close regulation is secured by means of a fly ball governor, which regulates the gas and air admitted in accordance with the load demand. Thorough scavenging of the cylinder is assured by a deflector on the piston.

On the N-SGL a combined speed and pressure governor regulates the amount of gasoline admitted to the cylinder.

The outstanding feature of the air end is, of course, the use of Simplate valves, which makes small clearances and high efficiencies possible.

The N-SG Compressor is guaranteed to run satisfactorily on any natural or artificial gas containing 600 B. T. U.'s per cubic foot or over. This should not cause difficulty, since most artificial gases contain at least this number of heat units, and since natural gases for the most part run between 900 and 1100

B. T. U.'s. The N-SGL is guaranteed to run satisfactorily on any grade of gasoline.

Both machines require little attention, being well suited to rough, heavy duty under conditions which prevent the employment of a highly trained attendant.

Full details will be found in Bulletin 34-Y, which the Chicago Pneumatic Tool Company will supply upon request.

What Is Man?

A man weighing 150 pounds approximately contains 3,500 cubic feet of gas, oxygen, hydrogen, and nitrogen in his constitution, which at 80 cents per thousand cubic feet would be worth \$2.80 for illuminating purposes. He also contains all the necessary fats to make a 15-pound candle and thus, with his 3,500 cubic feet of gases, he possesses great illuminating possibilities. His system contains 22 pounds and 10 ounces of carbon, or enough to make 780 dozen or 9,360 lead pencils. There are about 50 grains of iron in his blood and the rest of the body would supply enough to make one spike large enough to hold his weight. A healthy man contains 54 ounces of phosphorus. This deadly poison would make 800,000 matches, or enough poison to kill 500 persons. This, with 2 pounds of lime, makes the stiff bones and brains. No difference how sour a man looks, he contains about 60 lumps of sugar of the ordinary cubical dimensions, and to make the seasoning complete must be added 20 spoonfuls of salt. If a man were distilled into water he would make about 38 quarts, or more than half his entire weight. He also contains a great deal of starch, chloride of potash, magnesium, sulphur, and hydrochloric acid in his system.

Break the shells of 1,000 eggs into a huge pan or basin and you have the contents to make a man from his toenails to the most delicate tissues of his brain. And this is the scientific answer to the question, "What is man?"

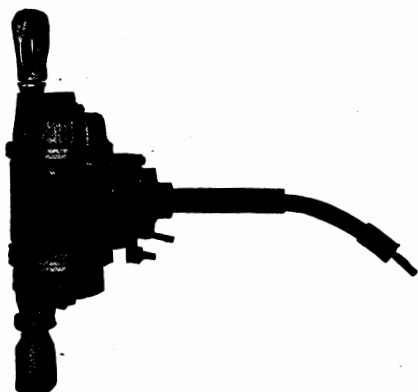
Nothing succeeds like the financial success some men make of a failure.

SPEED UP

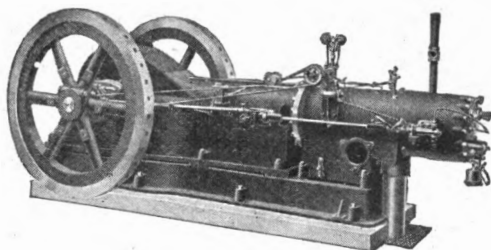
With Pneumatic



Boyer Riveting Hammer
Made in capacities for driving up to 1½-
inch rivets.
Bulletin 124



Duntley Electric Drill
Will operate on direct or single phase
alternating current.
Bulletin E-30



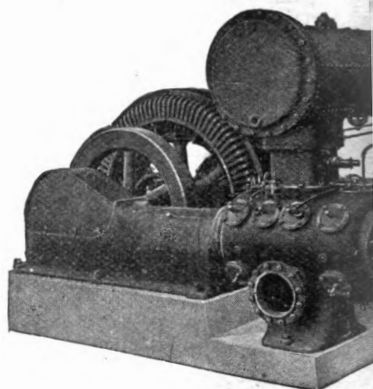
Giant Fuel Oil Engine
Bulletin 34-W

**1014 Fisher Bldg.
Chicago**

The present shortage of which is increasing day by day makes it imperative that labor be supplemented by machinery wherever possible.

This is best accomplished by pneumatic and electric tools because of their convenience and economy.

The CHICAGO PNEUMATIC line which has been the standard for twenty-five years, comprises pneumatic and electric tools



Class O-CE Chicago Pneumatic Compressor

"Chicago Pneumatic" Compressors in 300 sizes and styles for operation on short belt with idler, gasoline or electric or direct motor drive in capacities from 1 cubic foot of free air per minute.

Bulletin 34-M

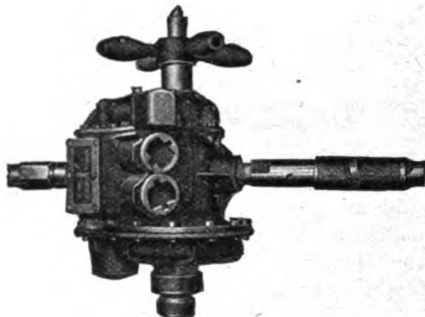
CHICAGO PNEU

BUSINESS

and Electric Tools

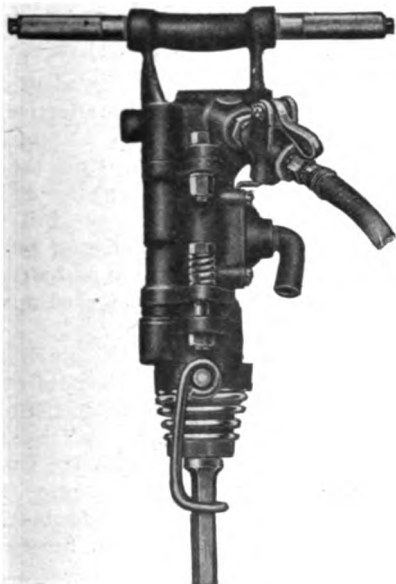
appliances of every description,—
Boyer Pneumatic Riveting, Chipping and Calking Hammers; Little Giant Air Drills and Grinders; Duntley Electric Drills, Hammers, Hoists and Grinders; Chicago Pneumatic Simplate Valve Air Compressors; Giant Fuel Oil, Gas and Gasoline Engines; Hummer Hammer Rock Drills; Chicago Pneumatic Water Lift Pumps; and Little Giant Motor Trucks.

Write for Bulletins.

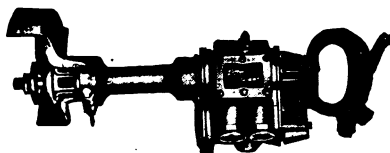


Ball Bearing Little Giant Drill
Furnished either reversible or non-reversible. Capacity, 2 inches.

Bulletin 127

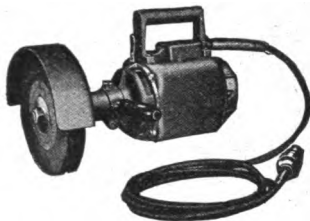


Hummer Self-Rotating Hammer Drill
Bulletin 216



No. 10 Little Giant Grinder
For light work, speed light, 4200 R. P. M.

Bulletin 127



Size No. 8 BP Duntley Electric Portable Grinder
Bulletin E-39

IATIC TOOL CO. 52 Vanderbilt Ave. New York

IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air
and Electrical Appliances

BY THE

IDEAL POWER PUBLISHING CO.
1014 FISHER BUILDING
CHICAGO, U. S. A.

C. I. HENRIKSON Editor

VOL. XII JULY, 1917 No. 5

TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year
Other Countries in Postal Union, 50 cents per year

ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our
subscription list.

"Business is Not As Usual."

"I should say that business is not at all as usual," said W. O. Duntley, President of the Chicago Pneumatic Tool Co., which makes the Little Giant line of trucks.

"Indeed, the motor truck business is better than it has been in some time. Our current sales have topped all previous selling peaks.

"The campaign for economy now being so forcefully carried on by many agencies, and in particular the newspapers, has brought home in striking fashion the assured economy of motor transportation.

"Business executives are recognizing it as part of their duty to retire their horses, which eat up uncountable acres of food that should feed human beings. In addition to this need and endeavor for national economy, personal economy also dictates that, as the price of feed is constantly rising, the work horse must be retired because he is too costly a transportation unit.

"And everywhere, and in greater numbers than ever before, the efficient, economical motor truck is displacing the traditional weary-eyed, ever-eating horse."

WANTED—Position repairing pneumatic hammers and air motors with railroad company. Experienced. Capable. Address Ideal Power, Ad. 24.

A New Note in Truck Advertising.

An extremely interesting departure in motor-truck advertising recently appeared for the Little Giant truck, manufactured by the Chicago Pneumatic Tool Co.

Neglecting the universally accepted greater efficiency of the motor-truck, the advertisement proved from figures compiled by the Literary Digest, that horse-drawn vehicles were daily becoming more uneconomical.

The food supply for humans is decreasing. Its price is increasing. Yet horses are being daily fed it.

Seventeen million work horses each consume 136 bushels of oats per year, or 2,312,000,000 bushels of what might be oat products, the most nourishing food for human beings.

Again, the U. S. Department of Agriculture says it takes over three average acres to supply a human being, and more than five for a horse. So every team of horses costs more to maintain than three human beings.

The expert analysis continues: "Wherever a team of horses is employed to do work that can be done more effectively and more economically by a motor-driven vehicle, the up-keep of those horses is seriously menacing the food supply of human beings, even if it is not robbing three human beings of food.

"The great war will be won or lost by food. All the authorities are agreed upon that.

"Even if there be no actual pinch of hunger, the rising cost of foodstuffs is bound to crystallize into an irresistible public opinion whose object will be to compel the conservation of food.

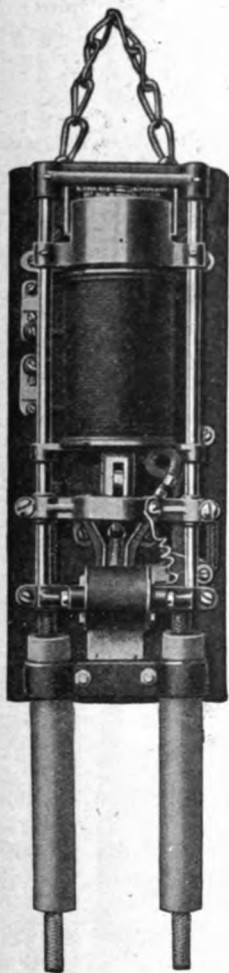
"Those who employ horses to do work that motor trucks can do better may have to justify the use of horses."

Compulsory.

Tired Mother (to restless child):
"Now you sit still. I've brought you ten miles to enjoy this entertainment, and you shall enjoy it, if I have to pull every hair out of your head."

Duntley Self-Setting Circuit Breaker

(Patented May 16, 1916)



This Circuit Breaker, which possesses many novel features, was designed for use with Duntley electric tools, not only as a protection to the tools, but as a protection to the workmen as well. It may be placed anywhere in the drill circuit, as the self-setting feature makes its proximity to the tool unnecessary. The breaker is provided with two two-conductor cables, which are interchangeable so far as their connection to the line and the tool is concerned, thus obviating any special precautions in making connection. The circuit from the tool to the breaker is made by means of the ordinary two-conductor cable with which all Duntley direct current tools are provided.

The breaker operates on the solenoid principle, with a series coil to open the circuit at the predetermined point and an air-actuated dash pot to prevent the opening of the circuit when the momentary rush of current occurs at the time of starting the tool. Liberal arcing space is provided and a magnetic blow-out disrupts the arc quickly and effectively. A shunt coil which provides magnetic flux for the blow-out also serves to hold the breaker open as long as the switch on the tool is left in. When this switch is released by the operator the breaker resets itself ready to start the tool as soon as the switch is thrown in again. The resetting of the breaker is so nearly instantaneous that very little time is lost when an overload does occur, causing the breaker to open; nevertheless the operator soon learns just how much load he can apply without opening the breaker, and the result is that the tool is operated to its maximum capacity practically all of the time without endangering the windings.

The base of the Circuit Breaker is 5 inches wide by 12 inches long, and the entire mechanism is provided with a substantial pressed steel cover to protect it from injury. A chain is provided at the upper end so that it may be suspended at any convenient place.

The Duntley Self-Setting Circuit Breaker is made for direct current only and in capacities to take care of the No. 2 Duntley drill and larger.

For prices and further particulars address

CHICAGO PNEUMATIC TOOL COMPANY

1014 Fisher Building
CHICAGO

BRANCHES EVERYWHERE

52 Vanderbilt Ave.
NEW YORK

When writing to advertisers please mention Ideal Power.



Three views illustrating Quantity Production of Chicago Pneumatic Simplate Valve Compressors at Plant No. 1, Chicago Pneumatic Tool Company, Franklin, Pa.



When General Pershing returned from Mexico he was given an ovation by the citizens of El Paso. The above photo was taken as the head of the procession was passing the salesrooms of Don A. Carpenter & Co., southwestern agents for the Chicago Pneumatic Tool Company.

A traveling man was eating in a stuffy little restaurant one very hot summer day. There were no screens at the windows or door. The proprietress herself waited on her customers and shooed flies from the table at the same time. Her energetic but vain efforts attracted the attention and sympathy of the traveling man, who said:

"Would it not be better to have your windows and door screened?"

"Well, yes, I s'pose that would help some," replied the woman, after thinking a moment, "but 'twould look mighty lazy like."

"Papa, what do you call a man who runs an auto?"

"It depends on how near he comes to hitting me."—Houston Post.

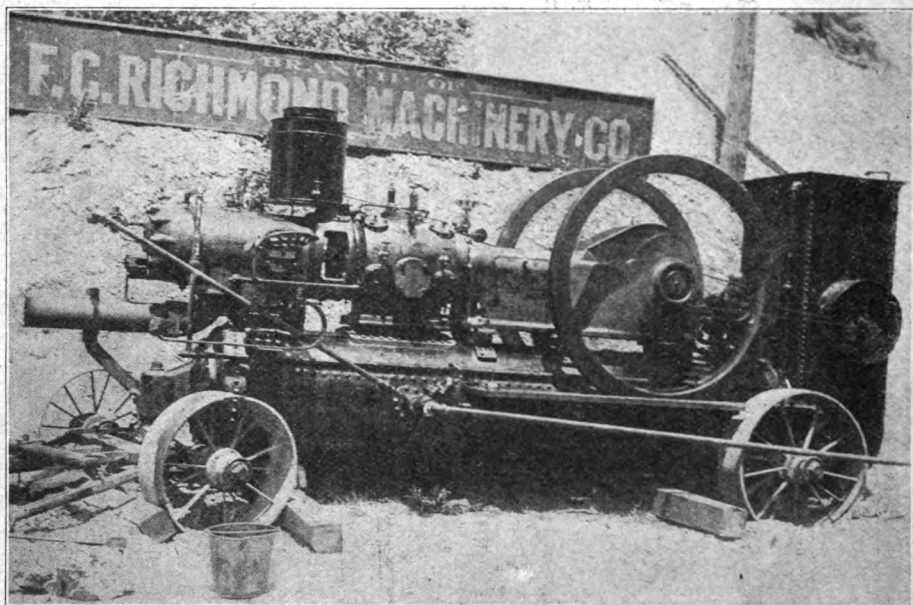
After the clock struck eleven the peevish father strode to the top of the stairs and called down: "Mabel, doesn't that young man know how to say 'good-night'?"

"Does he?" echoed Mabel from the darkened hallway below. "Well, I should say he does."

One of the greatest factors for producing insanity are the lawyers for the defense.

Some men have courage only when they lose their tempers.

As soon as a man discovers that he has made a mistake he begins to look around for someone to blame it on.



Chicago Pneumatic N-SO Fuel Driven Air Compressor at work on Good Roads Day for F. C. Richmond Machinery Co., Salt Lake City.

A Novel Celebration.

One of the Annual Outings made by the Salt Lake Commercial Club, and the Rotary Club of that city, is what is known as Good Roads Day, which is held on June 7th of each year.

On this day members of the above clubs, together with many other business and professional men, don their working clothes and spend the day with pick and shovel in bettering road conditions at some point in the vicinity of Salt Lake City.

For some years the road through Parley's Canyon, which is a portion of the scenic Lincoln Highway, has been the scene of much activity at this annual outing.

On Good Roads Day of this year the point of attack was an overhanging cliff which jutted out into the roadway, making an extremely narrow and dangerous section of road.

The F. C. Richmond Machinery Co., of Salt Lake City, contributed the use of a 12x8 $\frac{1}{4}$ x12-inch Chicago Pneumatic type N-SO Tank Mounted Air Compressor, as well as a number of A-66

Hummer Drills, and the necessary operators for both.

Some twenty-five 12-foot holes were



Chicago Hummer Hammer Drill putting 12-foot holes into rock at side of mountain in process of widening road on Good Roads Day at Salt Lake City.



SOLDCO Is Not a Dressing—It Preserves the Leather

IT'S simple operation to apply "Soldco" to your leather belts—a handful of cotton waste dipped in "Soldco" and wiped over the outside surface preserves the leather and makes your belts immune to dampness, steam, heat, chemical fumes and all atmospheric conditions.

"Soldco" drives out all moisture, grease, oil, dirt and prevents deterioration of your belts. Old belts which are ready for the junk heap can be carried with "Soldco" and put back into service.

"Soldco" is non-acid, non-volatile, non-inflammable and non-combustible.

By treating your shop belts with "Soldco" you double their service life and increase their transmission power 20%.

Write for complete information and sufficient quantity of "Soldco" for a tryout on your belts.

THE DUNTLEY COMPANY

732 Michigan Ave., Chicago

295 Fifth Ave., New York City

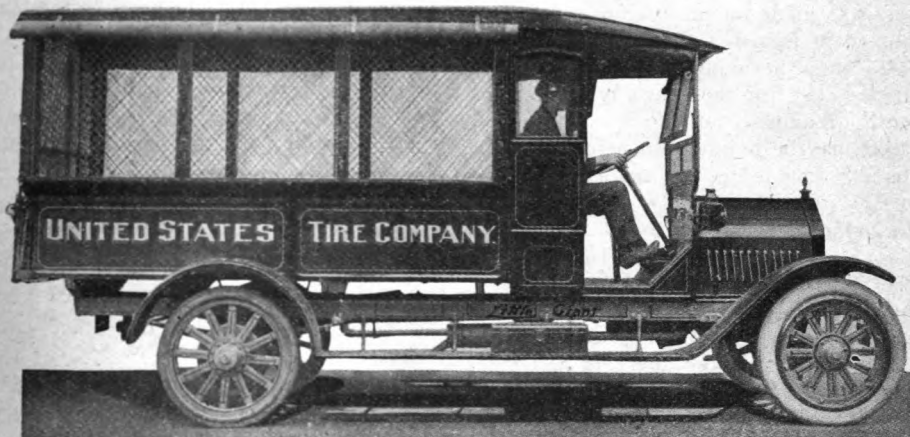
drilled along the base of this ledge of rock, and were exploded in groups of eight to ten holes. The resulting blasts widened the road approximately 8 feet at this point, and resulted in transforming an extremely dangerous section of highway into a safe one, which now has all the appearance of a boulevard. The

accompanying views show the compressor and one of the drills in this work.

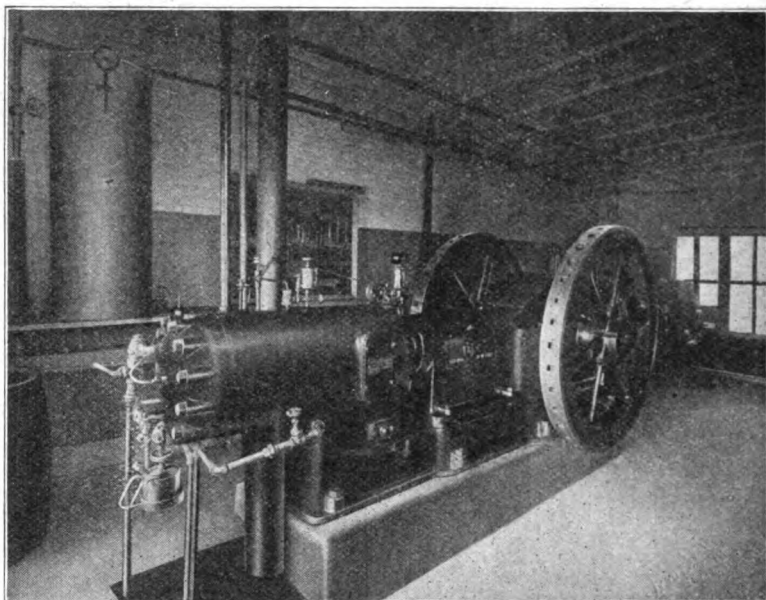
Satisfied.

Counsel—I'm sorry I couldn't do more for you.

Convicted Client—Don't mention it, guv'nor; ain't five years enough?



The United States Tire Co. uses Little Giant trucks. A Model 15 one-ton in their service in Chicago.



The power plant of the Laurel Milling and Grain Co., Laurel Neb. A Giant Fuel Oil Engine was installed early in 1916 and has been in continuous operation—all through the wheat season, from ten to eighteen hours per day—without a cent of cost for repairs.

Absence of intricate mechanism and delicate adjustments and general simplicity of construction make the Giant Engine the ideal prime mover for isolated power plants. No expert attendance is required and the cost of operation is extremely low.

Oil Fuel Effects a Saving of 41 Per Cent.

The Federal Public Works Department of Canada has been making some interesting experiments in regard to the relative economy of coal and oil as fuel on Government-owned dredges. The test was made on the dredging fleet employed in British Columbia, and the results show a saving of \$37,164, or over 41 per cent, for the year's operations on eight dredges.

"It may be pointed out also," says the deputy minister in his report, "that the saving relates not only to the cost of fuel alone, but a very considerable additional saving is effected. Inasmuch as the fuel oil allows steam to be raised much more quickly, the cost of firing and the cost of handling the fuel are much decreased, and there is less wear and tear on the vessels."

Life is one Dear thing after another.
Love is two Dear things after each other.

The Mechanical Age.

When speaking to a body of workmen the other evening, I made this statement: "The reason why you have so much more today than your fathers had forty years ago is not because you work harder, but because you have better machinery to work with. You really don't work as hard as your ancestors did. The inventors of machinery and those who had the courage to make and install these machines are the ones whom you should thank."—Babson.

"I see you have your arm in a sling," said the inquisitive passenger. "Broken, isn't it?"

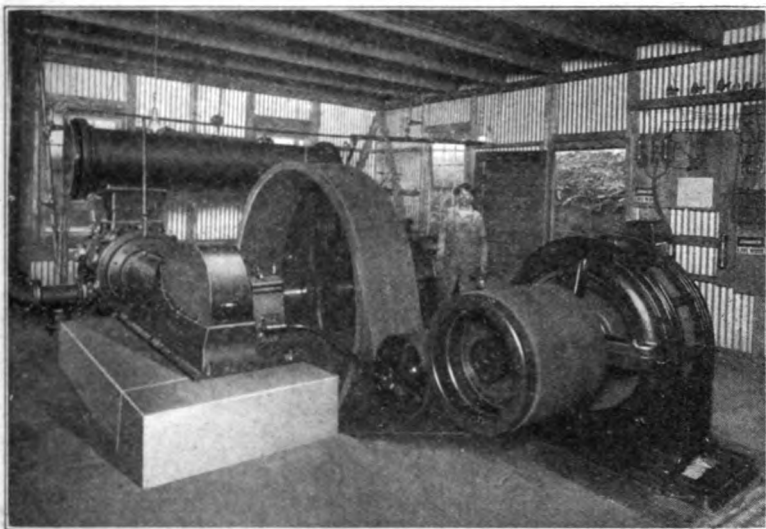
"Yes, sir," responded the other passenger.

"Meet with an accident?"

"No; broke it while trying to pat myself on the back."

"Great Scott! What for?"

"For minding my own business."



Chicago Pneumatic Class OCBE Compressor. One of six installed by the Alabama Co., Birmingham, Ala.

A 20x12x16 O-CBE Air Compressor in the service of The Alabama Company at their Hammond, Ala., iron mine about seven miles from Birmingham. The above installation is one of six Chicago Pneumatic Compressors installed by the Alabama Company. As a result of the perfect service which they obtained from the original compressor installed at the Attalla mines, and because of the wonderful efficiency of the Simplate Valves, with which all Chicago Pneumatic Compressors are equipped, The Alabama Company have installed Chicago Pneumatic Compressors in all of their plants.

The Alabama Company is regarded as one of the most progressive and prosperous institutions in the South and a large part of its present prestige is due to the untiring efforts of Mr. C. E. Morgan, Chief Engineer and General Superintendent, who has practically rehabilitated all of their various plants, including furnaces and ore and coal mines.

Caller—I suppose you can spell all the short words, Bobbie?

Bobbie—I can spell a lot of big ones, too. I can even spell words of four cylinders.

A Deep Shaft.

Here is a yarn I heard while acting as inspector on the Catskill aqueduct. Two miners were arguing about deep shafts they had seen. Finally one said: "Aw! you don't know what a deep shaft is. Why when I was out west I struck a town where they said there was a deep shaft, so I went to look her over. When I got to the location I found the hoist house was made of cut stone and inside it had a marble floor. I went in and there was the biggest hoist I ever saw running like hell and the hoist runner was sitting in a chair sound asleep. I ran over and woke him up and I says, 'You will be pulling the skipp through the head house if you don't stop her.' He says, 'What day of the week is it?' and I says, 'Tuesday.' 'Oh, hell!' he says, 'she won't be up till Friday.' That's what I call a deep shaft."—H. S., Bronxville, N. Y.

She winds a towel around her head and calls for a bucket of water—it means the beginning of a big day.

He winds a towel around his head and calls for water—it means the end of a big night.



**A LITTLE GIANT TRUCK IN THE SERVICE OF THE
GREATEST AMERICAN SPORT.**

The St. Louis Cardinals, the most dangerous contender in the National League pennant race, a team that is feared by all the league. Manager Huggins has shown remarkable talent in picking young players and getting a winning combination. The team is now (at the time we go to press) in third place, within striking distance of the leaders, the New York Giants. It is leading the league in fielding and base running. The team will bear watching. The Cardinals look well riding in a Little Giant Truck, don't they? Hans E. Seidl and Jack Ryan of the Tool company are on the running board.



**A LITTLE GIANT TRUCK WITH SPECIAL TANK BODY IN THE SERVICE
OF THE RICHFIELD OIL CO., LOS ANGELES.**

The tank is divided into three compartments, one each for gasoline, distillate and lubricating oil. The gasoline and distillate compartments are equipped with two faucets each for drawing contents quickly. The Richfield Oil Co. find the outfit very efficient and far more rapid and efficient as a distributor of oil than the former horse and wagon method.

None Would Admit It.

In ancient Greece there lived a learned Judge who was very deaf. Before him one day there appeared two litigants who also were deaf. There being no attorneys in these days, the Judge invited the plaintiff to state his case.

The plaintiff arose. "This man," he said, pointing to the defendant, "is a tenant in my property. He hasn't paid any rent for a long time, and refuses to do so. I ask your Honor for a decree which will enable me to collect what is due me."

The plaintiff, having finished and sat down, the Judge motioned for the defendant to stand and tell his side of the story. The defendant said, "I do not own the dog. I am sorry he bit the gentleman, but he does not belong to me, and I do not feel that I should be responsible for the damage he inflicts."

The defendant sat down and the Judge drew his robe a little closer about. "To forget the ties of blood," he observed, "is exceedingly reprehensible. She is your mother, and must support her."

On His Way.

"I'se gwine to quit, Boss. I'se got a bettah job."

"Bigger pay, Sam?"

"No, sah; de pay's smaller, but the work's easier."

"Sure, Oi'll write me name on the back o' your note, guaranteein' ye'll pay ut," said Pat, smiling pleasantly, as he indorsed Billup's note, "but Oi know ye won't pay ut. We'll have a laugh at th' xpense of the bank."

"Oh, Myrtie! Weren't you frightened to death when that burglar broke into your room?"

"Frightened 's no name for it; I was dressing."

"Mercy! how terribly embarrassing! Whatever did you do?"

"Oh, he was very considerate, he covered me with his revolver."

The Penalty of Getting Funny

A salesman happened to call on a merchant the other day, and at the same time there also entered a poor old woman soliciting alms.

The merchant, wishing to play a joke on the salesman, told the woman to "ask the boss," at the same time pointing to Mr. Salesman.

Mr. Salesman was thunderstruck for the moment, but, regaining his self-possession at once, said, turning to the merchant, who was a very small man, "Boy, give this poor woman a dime out of the till."

The merchant paid.

Preparedness.

The minister came to Johnson's house one afternoon to a christening party—he was to christen Johnson's little son, John, Jr.

"Johnson," said the minister solemnly, taking his host aside before the ceremony, "Johnson, are you prepared for this solemn event?"

"Oh, yes, indeed, doctor," Johnson beamed. "I've got two hams, three gallons of ice cream, pickles, cake——"

"No, no, Johnson," said the minister with a smile. "No, no, my friend, I mean spiritually prepared."

"Well, I guess yes! Two demijohns of whisky and three cases of beer!" Johnson cried in triumph.

Mistress—Did you see if the butcher had pig's feet?

Maid—No, ma'am, I couldn't, he had his boots on!

Wife—Do you know, you are growing handsome, hubbie?

Husband—Yes, it's a way I have when it gets anyway near your birthday.

Fame and fortune await the inventor of an alarm clock that will awaken only the one who wants to get up, and not everybody else in the house.

Many women are not as fresh as they are painted and lots of men are more so.



Real success consists in achieving satisfaction.

Many a man seems to have the courage of a crawfish.

Never start on a journey Friday if Saturday is pay day.

Fools throw kisses, but the wise men deliver them in person.

A woman's vanity begins with her hat and ends with her shoes.

Liquor affects a man's brain, if he has any; if not, it affects his legs.

Favors are seldom satisfactory. The best way is not to need them.

Great men do much for others and take it out in posthumous fame.

A vivid imagination is often even more dangerous than a little learning.

When Adam and Eve put on fig leaves they organized the first style show.

Getting up in the morning is a struggle for those people who do not make it worth while.

Travel often broadens a man's mind and also his girth, if he can afford to stop at first-class hotels.

No man is so strong or great that he is not afraid of somebody. The chances being that the somebody is a woman.

Bruises should be judged solely by the way they were obtained.

Silent contempt is responsible for many an undelivered blow.

It is better to be slow to anger than to be handy with a six-shooter.

Many a man has lost lots of money through the hole in the top of his pocket.

Some women marry for the purpose of obtaining a listener who can't get away.

Truth is better than falsehood, but false teeth are better than no teeth at all.

Insomnia is responsible for much of the imagination and ignorance in the world.

There is no hope for the man who begrudges himself an occasional hearty laugh.

A girl is always sure she is in love with some man, even if she isn't sure which man.

If your daughter makes a good marriage, you always accept it as proof of your smartness.

"He was the hero of two wars," read the inscription on a tombstone. He had been married twice.

We would get more enjoyment out of a dollar if it took as long to spend it as it does to earn it.

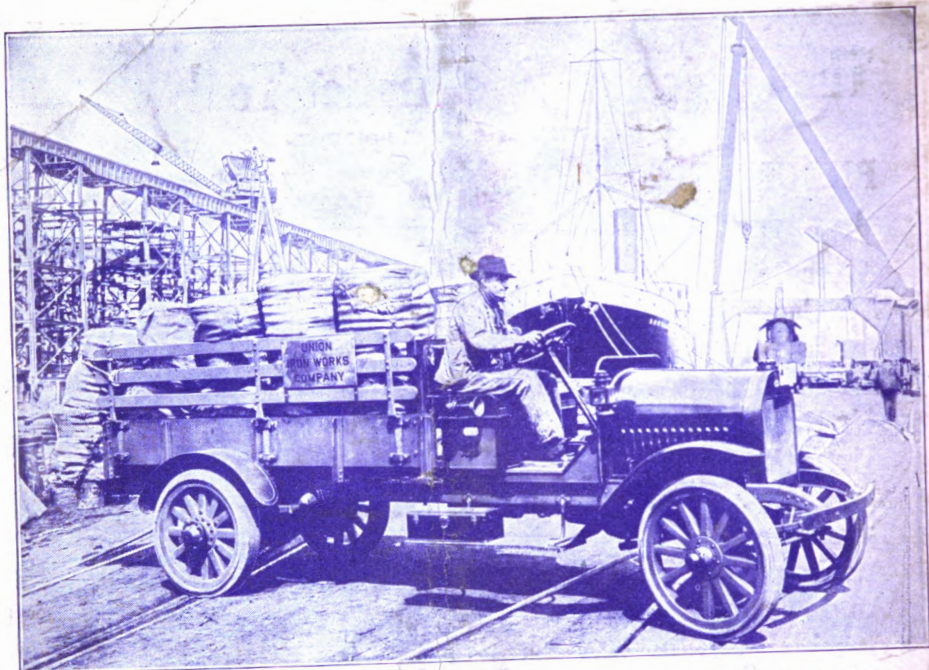
The Chicago Pneumatic Tool Co.

MANUFACTURERS OF THE FOLLOWING

PNEUMATIC TOOLS, APPLIANCES, ETC.

After Coolers	Hammer Drills, Electric
Air Compressors	Hammer Drills, Pneumatic
Air Injectors	Hammers, Riveting
Air Motors	Hammers, Chipping and
Air Receivers	Calking
Air Jacks	Hammers, Stone
Air Lifts	Hoists, Duntley Electric
Airoilene Oil	Hoists, Pneumatic Geared
Airoilene Grease	Hoists, Straight Lift
Angle Gears, Boyer	Holders-on
Automatic Oiling Devices	Hose, Special High Grade
Chucks, Drill	Hose Clamp Tool
Chucks, Expanding	Hose Couplings (Universal)
Commercial Car	Inter-Coolers
Cranes	Motor Trucks
Drift Bolt Drivers	Oil Driven Compressors
Drills, Boyer	Oil Engines
Drills, Hummer Hammer	Railway Motor Section
Drills, Keller	Cars
Drills, Little Giant	Reamers
Drills, Rock	Rivet Busters
Drilling Stands	Riveters, Jam
Elevators	Riveters, Yoke
Electric Drills, Duntley	Riveters, Compression
Electric Grinders, Duntley	Sand Rammers
Gas Engines	Speed Recorders
Gasoline Driven Com-	Staybolt Chucks
pressors	Stone Dressers
Gasoline Engines	Water Lift Pumps
Grinders, Portable Electric	Winches, Portable

When writing to advertisers please mention Ideal Power.



A Model 16 two-ton *Little Giant* doing its bit where activity is greatest.
Scene in the shipyards of the Union Iron Works Co., San Francisco

The decreasing supply and increasing cost of food stuffs is motorizing the transportation world. Those who employ horses for doing what motor trucks can do may soon be called upon to justify their use.

To those prospective users of motor trucks who believe in the value of past performance, who believe that long experience in manufacture spells quality of product, who believe that strong financial backing and prestige are essential to a guarantee, we recommend our master product—

Equipped with Duntley Hydro-Pneumatic Generator, using kerosene, distillate or other low grade fuel at
Saving in Fuel Cost of 50%

The *Little Giant* Truck

Capacities: 1, 2, 3½ Tons and Convert-a-Car (Ford one-ton truck unit)

ASK FOR CATALOGUE AND PRICES

Chicago Pneumatic Tool Company

BRANCHES EVERYWHERE

Little Giant Building, 1615 Michigan Avenue, Chicago



IDEAL POWER



A MONTHLY MAGAZINE
PUBLISHED BY THE
CHICAGO PNEUMATIC
TOOL CO. NEW YORK

Chicago Pneumatic Tool Company

General Office, - Fisher Building, CHICAGO
 Eastern Office, 52 Vanderbilt Ave., NEW YORK

BRANCH OFFICES

BOSTON:	185 Pleasant Street
BIRMINGHAM:	824 Brown-Marx Building
BUFFALO:	503 Ellicott Square Building
CINCINNATI:	607 Mercantile Library Building
CLEVELAND:	2122 Euclid Ave. and 1241 E. 49th Street
DETROIT:	Second Ave. and Amsterdam Street
DULUTH, MINN.:	Torrey Building
EL PASO:	303 San Francisco Street
ERIE, PA.:	12th and Cranberry Streets
FRANKLIN, PA.:	N. 13th Street
JOPLIN, MO.:	308 Wall Street
LOS ANGELES:	925 Title Insurance Building
LOS ANGELES:	241-243 S. Los Angeles Street
MILWAUKEE:	1310 Majestic Building
NEW ORLEANS:	853 Carondelet Street
OMAHA:	1018 Douglas Street
PHILADELPHIA:	1740-42 Market Street
PITTSBURGH:	10 and 12 Wood Street
PORTLAND, ORE.:	46-48 Front Street
RICHMOND, VA.:	1004 Mutual Building
SALT LAKE CITY:	117-19 West 2nd South Street
SEATTLE:	122 King Street
ST. LOUIS:	813-15-17-19 Hempstead Street
ST. PAUL:	Pioneer Building
SAN FRANCISCO:	71 First Street
SAN FRANCISCO:	627 Howard Street

FOREIGN

Canada:	{ Montreal, Canadian Pneumatic Tool Co. Montreal, Toronto, Winnipeg, The Holden Co., Ltd.	Russia:	{ Petrograd, Phoenix Engineering Works Co., Ltd., Polustrovskaya Quay No. 39.
British Columbia:	{ Vancouver, Holden Co., Ltd., 542 Pendar St., West.	India:	{ Bombay, Consolidated Pneumatic Tool Co., Ltd., Ram-part Row, Fort.
Mexico:	{ Mexico City, The General Supply Company, Av. Isabel La Catolica No. 51. (Sonora and Chihuahua).	Japanese Empire:	{ Tokyo, Osaka, Seoul, Dairen. The F. W. Horne Co.
Northern Mexico:	{ D. A. Carpenter & Co., El Paso, Texas.	Philippine Islands:	{ Manila, F. L. Strong Machinery Co., 64-68 Calle Echague.
Great Britain:	{ London, The Consolidated Pneumatic Tool Co., Ltd., Egyptian House, 170 Piccadilly, W. 1.	Australia:	{ Sydney, Henry W. Peabody & Co.
Spain:	{ Paris, Anciens Etablissement Glaenzer & Perreaud, 18-20 Faubourg du Temple.	New Zealand:	{ General Sales Agents, International Railway Supply Co., 30 Church Street, New York City.
Portugal:	{ Milan, The Consolidated Pneumatic Tool Co., Ltd., via A Capellini 7.	South America:	{ Buenos Aires, Argentina, Evans, Thornton & Co.
France:	{ G. Hartmann, P. O. Box 1, Christiania, Norway.	South Africa:	{ Johannesburg, The Consolidated Pneumatic Tool Co., Ltd., 190 Main St.
Italy:	{ Brussels, The Consolidated Pneumatic Tool Co., Ltd., 22 Chaussee de Forest, Porte de Hal.	Hawaiian Islands:	{ Honolulu, H. S. Gray & Co., 832 Fort St.
Norway:		Cuba:	{ Havana, J. F. Berndes & Co., Box 349.
Sweden:			
Denmark:			
Belgium:			

When writing to advertisers please mention Ideal Power.

BULLETIN DIRECTORY

Requests for these Bulletins should be directed to our Chicago or New York offices or to our nearest branch as shown on inside front cover.

PNEUMATIC TOOLS

- 121....Pneumatic Rammers and Foundry Appliances.
- 124....Pneumatic Riveting, Chipping, Calking and Stone Hammers.
- 125....Pneumatic Yoke, Jam and Shell Riveters, Holders-on, Drift Bolt Drivers, Rivet Busters.
- 127....Pneumatic Drills, Corner Drills, Reamers, Wood Boreers, Flue Rolling and Tapping Machinery and Grinders.
- 128....Miscellaneous equipment for Pneumatic Drills, viz.: Chucks, Twist Drills, Reamers, Augers, Flue Cutters, Flue Expanders, Angle Gears.
- 129....Hose, Hose Couplings and Hose Clamp Tools.
- 130....Lubrication of Pneumatic Tools.
- 132....Pneumatic Motors and Pneumatic Geared Hoists.
- 133....Cylinder Air Hoists and Jacks.
- 296....Special E, ER, and ERC Little Giant Drills.

ELECTRIC TOOLS

- E-41..Duntley Electric Tools for Street and Interurban Railways.
- E-42..Universal Electric Drills.
- E-43..Duntley Universal Electric Hammer Drill.
- E-44..Duntley Electric Sensitive Drilling Stand.
- E-45..Duntley Portable Electric Hoists.
- E-46..Duntley Heavy Duty Electric Drills—Direct Current.
- E-47..Alternating Current Duntley Electric Drills.
- E-48..Duntley Electric Sand Sifter.
- E-49..Duntley Electric Grinders.
- 233....Duntley Electric Tool Booklet.

AIR COMPRESSORS AND FUEL OIL ENGINES

- 34-A..Class "G" Steam Driven "Chicago Pneumatic" Compressors.
- 34-C..Erecting and Operating Instructions for Class A-G Giant Gas Engines.
- 34-E..Instructions for Installing and Operating Class N-SG Gas Driven Air Compressor.
- 34-F..Design and Construction Class "G" "Chicago Pneumatic" Compressors.
- 34-G..Air Receivers, Aftercoolers, Reheaters, etc.
- 34-H..General Instructions for Installing and Operating "Chicago Pneumatic" Compressors.
- 34-I..Instructions for Installing and Operating N-SS and N-SB Compressors.
- 34-J..Instructions for Installing and Operating Class "O" Compressors.

- 34-K..Class N-SO Fuel Oil Driven Air Compressors.
- 34-L..General Pneumatic Engineering Information.
- 34-M..Class "O" "Chicago Pneumatic" Steam and Power Driven Air Compressors.
- 34-N..Class N-SS and N-SB Single Enclosed Air Compressors.
- 34-O..Instructions for the Installation and Care of "Chicago Pneumatic" Gasoline Driven Air Compressors.
- 34-Q..Giant A-O Fuel Oil Engine Applications.
- 34-S..Small Power Driven Air Compressors.
- 34-U..Instructions for Installing and Operating Class N-SO Fuel Oil Air Compressors.
- 34-V..Instructions for Installing and Operating Giant Fuel Oil Engines.
- 34-W..Class A-O Fuel Oil Engines.
- 34-X..Class A-G Gas and Gasoline Engines.
- 34-Y..Class N-SG Gas and Gasoline Driven Air Compressors.
- 34-Z..Class N-SS Automatic Steam Driven Compressors.
- 213....Simplify Flat Disc Valves.
- 224....Compressor Booklet.
- 281....Giant Fuel Oil Gas and Gasoline Engine Application Folder.

ROCK DRILLS AND HAND DRILLS

- 137....Chicago Giant Rock Drills.
- 148....Chicago Valveless Hand Drills.
- 149....Chicago Portable Mine Hoist.
- 150....Chicago Coal Drills.
- 151....Chicago Slogger Rock Drills.
- 152....Chicago Gating Drills.
- 153....Chicago Sinker.
- 154....Chicago Stopper.
- 172....Chicago Plug and Feather Drill.
- 192....Stone Tools, etc.
- 216....Hummer Hammer Drills.

LITTLE GIANT TRUCK

- 285....Catalogue.
- 287....Little Giant Convert-a-Car Circular.
- 298....Little Giant in the Lumber Business.
- 299....Duntley Hydro-Pneumatic Generator on Model 16 Little Giant Truck.
- 306....Little Giant in the Transfer, Storage and Moving Business.
- 308....Convert-a-Car Circular.
- 310....Little Giant in the Packing and Provision Business.
- 311....Duntley Generator Circular.

ROCKFORD AND MISCELLANEOUS

- 263....Boyer Speed Recorder.
- 266....Rockford Railway Motor Car.
- 177....Lubrication of Rockford Cars.
- 119....Operation of Rockford Cars.
- 251...."Chicago Pneumatic" Water Lift Pump.

CHICAGO PNEUMATIC TOOL COMPANY

1014 Fisher Bldg., CHICAGO

Branches Everywhere

52 Vanderbilt Ave., NEW YORK

When writing to advertisers please mention Ideal Power.

CONVENTIONS.

February 18-24, 1918—American Institute of Mining Engineers, New York City.
 May 20-25, 1918—American Water Works Association, St. Louis, Mo.
 May 20-21-22-23, 1918—International Railway Fuel Association, Hotel Sherman, Chicago, Ill.
 August 6-10, 1918—Universal Craftsmen Council of Engineers, Detroit, Michigan.
 September, 1918—The International Steam Engineers, Cleveland, Ohio.
 September, 1918—National Association of Stationary Engineers, Cincinnati, Ohio.
 September 10, 1918—Roadmasters and Maintenance of Way Association of America, Chicago, Ill.
 October 15-16-17, 1918—Maintenance of Way Master Painters' Association of U. S. and Canada, Chicago, Ill.

ENGINEERING SOCIETIES.

* American Association of Railroad Superintendents (General)—President, W. S. Williams, Waterloo, Iowa; General Secretary, E. H. Harman, Room 101 Union Station, St. Louis, Mo.
 American Electro-Platers Society—President, Walter Fraine, Dayton, Ohio; Secretary-Treasurer, Oscar E. Service, 5305 Warner Ave., Chicago, Ill.
 American Institute of Electrical Engineers—President, E. W. Rice, Jr., Schenectady, N. Y.; Secretary, F. L. Hutchinson, 33 W. 39th St., New York.
 American Institute of Mining Engineers—Secretary, Bradley Stoughton, 29 W. 39th St., New York City.
 American Mining Congress—Secretary, J. F. Callbreath, Jr., 743 Munsey Bldg., Washington, D. C.
 American Order of Steam Engineers—Supreme Chief Engineer, J. W. Palrent, Philadelphia, Pa.; Supreme Corresponding Engineer, Edw. A. Rebol, 1110 Earl St., Philadelphia, Pa.
 American Railway Engineering Association—Secretary, E. H. Fritch, 910 Michigan Ave., Chicago, Ill.
 American Road Builders' Association—Secretary, E. L. Powers, 150 Nassau St., New York.
 American Society of Civil Engineers—Secretary, Chas. Warren Hunt, 33 West 39th Street, New York City.
 American Society of Engineering Contractors (Inc.)—Secretary, J. R. Wemlinger, Woolworth Bldg., New York City. Meetings: Second Thursday every month.
 American Society of Heating and Ventilating Engineers—Secretary, C. W. Obert, 29 W. 39th St., New York City.
 American Society of Mechanical Engineers—Secretary, Calvin W. Rice, 29 W. 39th St., New York City.
 American Society of Naval Engineers—Secretary-Treasurer, Lieut. Commander F. W. Sterling, U. S. N., Navy Department, Washington, D. C.
 American Water Works Association—Secretary, J. M. Diven, 47 State St., Troy, N. Y.
 Association of Civil Engineers, Cornell University—President, H. F. Chadeayne, Ithaca, N. Y.; Secretary, A. S. Collins, Ithaca, N. Y.
 Boston Society of Civil Engineers—Secretary, S. Everett Tinkham, 715 Tremont Temple, Boston, Mass.
 Canadian Railway Club—Secretary, James Powell, 46 Aberdeen Avenue, St. Lambert, near Montreal, P. Q.
 Canadian Society of Civil Engineers—Secretary, Fraser S. Keith, 176 Mansfield St., Montreal, Canada.
 Central Railway Club—Secretary, Harry D. Vought, 95 Liberty St., New York.
 Civil Engineers' Society of St. Paul—Secretary, Harry A. Geist, 707 Germania Life Bldg., St. Paul, Minn.
 Cleveland Engineering Society—Secretary, Henry M. Wilson, Chamber of Commerce Bldg., Cleveland, Ohio.
 Connecticut Society of Civil Engineers—President, Harry R. Buck, Hartford, Conn.; Secretary-Treasurer, J. Frederick Jackson, Box 1304, New Haven, Conn.
 Detroit Engineering Society—Secretary-Treasurer, D. V. Williamson, 127 Franklin St., Detroit, Michigan.

Engineers' Club of Cincinnati—Secretary, E. A. Gast, P. O. Box 333, Cincinnati, Ohio.
 Engineers' Club of Minneapolis—President, E. H. Scofield, Minneapolis, Minn.; Secretary, E. M. Ashenden, Oakland Ave., Minneapolis, Minn.
 Engineers' Club of Philadelphia—Secretary, H. A. Stockley, 1317 Spruce St., Philadelphia, Pa.
 Engineers' Club of St. Louis—Secretary, W. W. Horner, 5203 Maple Ave., St. Louis, Mo.
 Engineers' Society of Northeastern Pennsylvania—Secretary, T. F. McKenna, care of Engineers' Club, Scranton, Pa.
 Engineers' Society of Pennsylvania—Secretary, E. R. Daasher, 31 S. Front St., Harrisburg, Pa.
 Engineers' Society of Western Pennsylvania—Secretary, Kenneth F. Treschow, 568 Union Arcade Bldg., Pittsburgh, Pa.
 Engineering Association of Nashville—Secretary, John M. McMurray, Commercial Club Bldg., Nashville, Tenn.
 Engineering Society of Buffalo—President, F. A. Lipdury, Vice President, David Powers; Secretary, F. B. Hubbard, 247 Rano St., Buffalo, N. Y.
 Illinois Society of Engineers—Secretary, E. E. R. Tratman, Wheaton, Ill.
 Indiana Engineering Society—Secretary, Chas. Brossman, Indianapolis, Ind.
 International Railway Congress Association—President (of the International Commission), W. Toudeller, 11 Rue de Louvain, Brussels, Belgium; Secretary, General L. Weissenbruch, same address.
 Iowa Engineering Society—Secretary-Treasurer, Prof. J. H. Dunlap, Iowa City, Iowa.
 Lake Superior Mining Institute—Secretary, A. J. Yungbluth, Ishpeming, Mich.
 Louisiana Engineering Society—President, Samuel Young, Secretary, W. T. Hogg, P. O. Box 20, New Orleans, La.
 Michigan Engineering Society—President, T. O. Williams, Kalamazoo, Mich.; Secretary, Wm. W. Cox, Kalamazoo, Mich.
 Montana Society of Engineers—President, James H. Kyd, Butte, Mont.; Secretary, Clinton H. Moore, Butte, Mont.
 National Electric Light Association—Secretary, T. Commerford Martin, 29 W. 39th st., New York City, N. Y.
 New England Association of Commercial Engineers—President, John A. Morehouse, 53 Devonshire St., Boston, Mass.; Secretary, Jas. F. Morgan, 63 Devonshire St., Boston, Mass.
 New England R. R. Club—Secretary, W. E. Cade, Jr., 633 Atlantic Ave., Boston, Mass.
 New York Railroad Club—Secretary, Harry D. Vought, 95 Liberty St., New York, N. Y.
 Ohio Engineering Society—President, Clyde T. Morris, O. S. U., Columbus, Ohio; Secretary, Jno. Laylin, Norwalk, Ohio.
 Ohio Society of Mechanical, Electrical and Steam Engineers—Secretary-Treasurer, Frank E. Sanborn, Ohio State University, Columbus, O.
 Railway Club of Pittsburgh—Secretary, J. B. Anderson, Room 207, Penna. R. R. Station, Pittsburgh, Pa.
 Richmond Railroad Club—Secretary, F. O. Robinson, C. & O. Railway, Richmond, Va.
 Rochester Engineering Society—Secretary, H. O. Stewart, 34 Clinton Ave., North, Rochester, N. Y.
 St. Louis Railway Club—Secretary, B. W. Frauenthal, Union Station, St. Louis, Mo.
 Southern & Southwestern Railway Club—Secretary, A. J. Merrill, Grant Bldg., Atlanta, Ga.
 Toledo Society of Engineers—President, C. J. Witker, care of Baker Bros. Foundry Co., Toledo, O.; Secretary, G. N. Schoonmaker, care of Division of Water, High Pressure Pumping Station, Toledo, O. Regular meeting: Second Friday in each month.
 Utah Society of Engineers—Secretary, Wm. H. Kelsey, Jr., P. O. Box 256, Salt Lake City, Utah. Third Wednesday of each month, except July and August.
 Vermont Society of Engineers—Secretary, Geo. A. Reed, Montpelier, Vt.
 Western Railway Club—Secretary-Treasurer J. W. Taylor, 1112 Karpen Bldg., Chicago, Ill.
 Western Society of Engineers—President Harry J. Burt, 1400 Monros Building, Chicago. Secretary, E. N. Layfield, 1735 Monadnock Bldg., Chicago, Illinois.

MECHANICAL AND TRADE SOCIETIES.

- Air Brake Association**—Secretary, F. M. Nel-
lis, 3014, 165 Broadway, New York, N. Y.
- American Association of Engineers**—Secretary,
A. H. Krom, 29 South La Salle St., Chicago.
- American Boiler Manufacturers' Association**—
President, M. H. Broderick, Muncie, Ind.; Sec-
retary, H. N. Covell, Lidgerwood Mfg. Co.,
Dikeman St., Brooklyn, N. Y.
- American Electric Railway Association**—Sec-
retary-Treasurer, E. B. Burrill, 8 W. 40th St.,
New York City.
- American Electric Railway Manufacturers' As-
sociation**—Secretary, Fred C. J. Dell, 50 East
42d St., New York City.
- American Electrochemical Society**—Secretary,
Prof. J. W. Richards, Lehigh University, South
Bethlehem, Pa.
- American Foundrymen's Association**—Sec-
retary, A. O. Backert, 12th and Chestnut Sts.,
Cleveland, Ohio.
- American Institute of Consulting Engineers,
Inc.**—Secretary, F. A. Molitor, 35 Nassau St.,
New York City.
- American Institute of Electrical Engineers**—
Secretary, F. L. Hutchinson, 33 West 39th St.,
New York.
- American Institute of Metals**—Secretary-
Treasurer, Fred L. Wolf, 96 W. 4th St., Mans-
field, Ohio.
- American Railway Association**—General Sec-
retary, J. E. Fairbanks, 75 Church St., New
York City.
- American Railway Bridge and Building As-
sociation**—President, S. C. Tanner, Camden Sta-
tion, B. & O. R., Baltimore, Ohio.
- American Railway Master Mechanics' Asso-
ciation**—President, Wm. Schlafe, G. M. S.,
Erie R. R., New York, N. Y.; Secretary, J. W.
Taylor, Karpen Bldg., Chicago.
- American Railway Tool Foremen's Associa-
tion**—Secretary-Treasurer, R. D. Fletcher, Belt
Railway of Chicago.
- American Road Builders' Association**—Sec-
retary, E. L. Powers, 160 Nassau St., New York.
- American Society for Testing Materials**—Sec-
retary-Treasurer, Edgar Marburg, University of
Pennsylvania, Philadelphia.
- American Supply Men's Association**—Sec-
retary, Porter G. Jones, 574 The Bourse, Philadel-
phia, Pa.
- Associated Manufacturers of Electrical Sup-
plies**—General Secretary, C. E. Dustin, 30 East
42d St., New York.
- Association of Edison Illuminating Companies**—
Secretary, George C. Holberton, San Fran-
cisco, Cal.
- Association of Iron and Steel Electrical Engi-
neers**—Secretary, John F. Kelly, McKeesport,
Pa.
- Association of Railway Electrical Engineers**—
Secretary-Treasurer, Joseph A. Andreuccetti, Chi-
cago & Northwestern Railway, Chicago.
- Association of Railway Telegraph Superin-
tendents**—Secretary, W. L. Connelly, Gibson,
Ind.
- Boiler Makers' Supply Men's Association**—Sec-
retary, Geo. Slate, The Boiler Maker, 461
Eighth Ave., New York City.
- Canadian Association of Stationary Engineers**—
Secretary, W. A. Crockett, Mount Hamilton,
Ont., Can.
- Canadian Roadmasters' Association**—Sec-
retary, J. M. Mackenzie, West Toronto, Can.
- Car Foremen's Association of Chicago**—Pres-
ident, H. H. Estrup, Gen. Car Foreman, C. & E.
I. R. R., Chicago, Ill.; Secretary, Aaron Kilne,
841 N. Lawler Ave., Chicago.
- Electrical Manufacturers' Club**—Secretary, H.
B. Crouse, Crouse-Hinds Co., Syracuse, N. Y.
- Electrical Supply Jobbers' Association**—Gen-
eral Secretary, Franklin Overbagh, 411 South
Clinton St., Chicago, Ill.
- Electrical Trades Association of Canada**—
Secretary, William R. Stavely, Royal Insurance
Building, Montreal, Can.
- Electric Power Club**—Secretary, C. H. Roth,
1410 West Adams St., Chicago.
- General Superintendents' Association of Chi-
cago**—Secretary, A. M. Hunter, 321 Grand Cen-
tral Station, Chicago.
- International Electrotechnical Commission**—
General Secretary, C. le Maistre, 28 Victoria
St., Westminster, London, S. W., England.
- Institute of Radio Engineers**—Secretary, Da-
vid Sarnoff, 111 Broadway, New York City.
- International Association of Municipal Elec-
tricians**—Secretary, C. R. George, Houston, Tex.
- International Railroad Master Blacksmiths'
Association**—Secretary, A. L. Woodworth, B. &
O. Ry., Lima, Ohio.
- International Railway Fuel Association**—Sec-
retary-Treasurer, J. G. Crawford, 702 E. 51st St.,
Chicago.
- International Railway General Foremen's As-
sociation**—Secretary-Treasurer, Wm. Hall, C. &
N. W. Ry., 1061 W. Wabash, Winona, Minn.
- International Union of Steam and Operating
Engineers**—President, Milton Snellings; Sec-
retary-Treasurer, James G. Hannahan, 6334 Yale
Ave., Chicago.
- Jovian Order—Jupiter (president), Henry J.
F. Strickland, Dallas, Tex.; Mercury (secretary),
E. C. Bennett, Syndicate Trust Building, St.
Louis, Mo.**
- Maintenance of Way Master Painters' Asso-
ciation of United States and Canada**—Secretary,
F. W. Hager, 1323 Hurley Avenue, Ft. Worth,
Texas.
- Master Boiler Makers' Association**—President,
D. A. Lucas, G. F. B. M., C. B. & Q. R. R.,
Havelock, Neb.; Secretary, Harry D. Vought,
95 Liberty St., New York City.
- Master Car Builders' Association**—President,
C. E. Chambers, I. M. P., C. R. R. of N. J.,
Jersey City, N. J.; Secretary, J. W. Taylor,
Karpen Bldg., Chicago, Ill.
- Master Car and Locomotive Painters' Asso-
ciation**—Secretary, A. P. Dane, B. & M. R. R.,
Reading, Mass.
- National Association of Electrical Inspectors**—
Secretary-Treasurer, William L. Smith, Con-
cord, Mass.
- National Association of Manufacturers**—Pres-
ident, Col. Geo. Pope, Hartford, Conn.; Sec-
retary, Geo. S. Boudinot, New York City.
- National Association of Stationary Engineers**—
Secretary, Fred W. Raven, 417 S. Dearborn
St., Chicago, Ill.
- National Electric Light Association**—Exec-
utive secretary, T. C. Martin, 33 West 39th St.,
New York.
- National Electrical Contractors' Association
of the United States**—Secretary, H. C. Brown,
41 Martin Building, Utica, N. Y.
- National Founders' Association**—Secretary, J.
M. Taylor, Room 842, 29 S. La Salle St., Chi-
cago, Ill.
- National Railway Appliances Association**—
Secretary-Treasurer, C. W. Kelly, 122 S. Michi-
gan Ave., Chicago, Ill.
- Purchasing Agents' Association of Pittsburgh**—
President, E. L. McGrew, Standard Under-
ground Cable Company, Pittsburgh; Secretary,
H. E. Harmon, Des Moines Bridge & Iron
Works, Pittsburgh.
- Radio Club of America**—Secretary, T. J.
Styles, 152 Beech St., Yonkers, N. Y.
- Railway Equipment Manufacturers' Associa-
tion**—President, W. E. Brumble, Nathan Manu-
facturing Co., Baltimore, Md.; Secretary, C. W.
Floyd Coffin, Franklin Railway Supply Co., Chi-
cago, Ill.
- Railway Signal Association**—President, W. H.
Elliott, Signal Engineer, N. Y. C. R. R., East
Albany, N. Y.; Secretary, C. C. Rosenberg,
Bethlehem, Pa.
- Railway Storekeepers' Association**—President,
W. A. Summerhays, G. S. K., I. C. R. R., Chi-
cago, Ill.; Secretary, J. P. Murphy, Box C,
Collinwood, Ohio.
- Railway Supply Manufacturers' Association**—
Secretary-Treasurer, J. D. Conway, 2136 Oliver
Bldg., Pittsburgh, Pa.
- Roadmasters' and Maintenance of Way Asso-
ciation**—Secretary, P. J. McAndrews, C. & N.
W. Ry., Sterling, Ill.
- Society for Electrical Development, Inc.**—
General Manager, J. M. Wakeman, 29 West
39th St., New York.
- Society for the Promotion of Engineering
Education**—Secretary, Dean F. L. Bishop, Uni-
versity of Pittsburgh, Pittsburgh, Pa.
- Travelling Engineers' Association**—Secretary,
W. O. Thompson, care of General Offices, N. Y.
C., Cleveland, Ohio.
- Universal Craftsman Council of Engineers**—
Secretary, Thos. H. Jones, Cherrydale, Alex-
andria County, Va.



"CLEVELAND" Bridge Reamers

These reamers are designed for rough, severe service in structural iron and steel work and boiler plates. They are particularly adapted for use in pneumatic and electric portable tools. Write for Circular U.

The CLEVELAND Twist Drill Co.
Chicago CLEVELAND New York

NECESSITIES

High Grade Rubber Goods
Fire Hose
Reels, Nozzles
Fire Hose Carts
Rubber Cement
P. & W. Rubber Preservative
Rubber Boots
Leather-Soled Rubber Boots

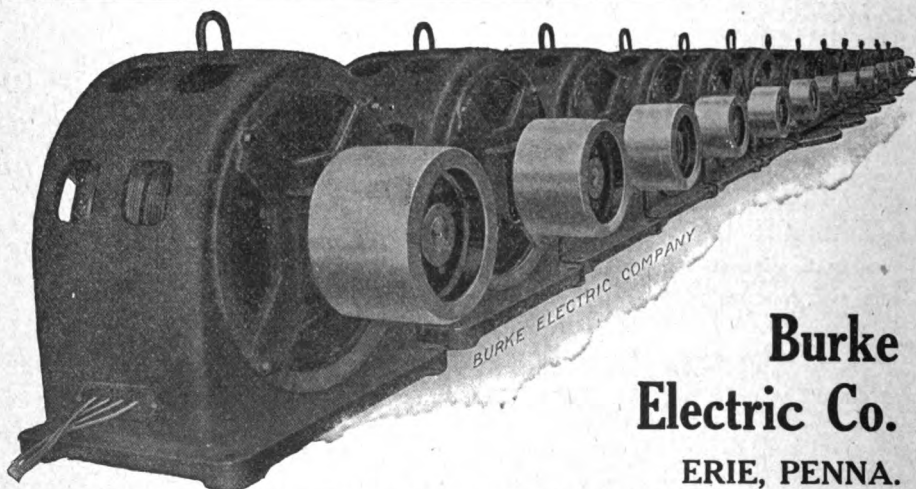
Leather Belting
Upholsterer's Leather
Leather and Silk Fringes
Vestibule Diaphragms
Gimp
Brass Nails
Leather Head Nails

Signal Flags
Bunting
Linoleum
Cab Cushions
Cab Curtains
Track Jacks
Economy Soap Stock
Nut Locks

GUILFORD S. WOOD

Great Northern Building,

CHICAGO, ILLINOIS



**Burke
Electric Co.**

ERIE, PENNA.

SALES OFFICES IN PRINCIPAL CITIES

Motors for All Purposes Where Reliable Power Is Essential

ALL SIZES

ALL SPEEDS

ALL VOLTAGES

Two and Three Phase Alternating and Direct Current

When writing to advertisers please mention Ideal Power.

IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances and Motor Trucks
By THE IDEAL POWER PUBLISHING COMPANY

Fisher Building, Chicago

VOL. XII

DECEMBER, 1917

No. 6

REDUCING THE HIGH COST OF POWER

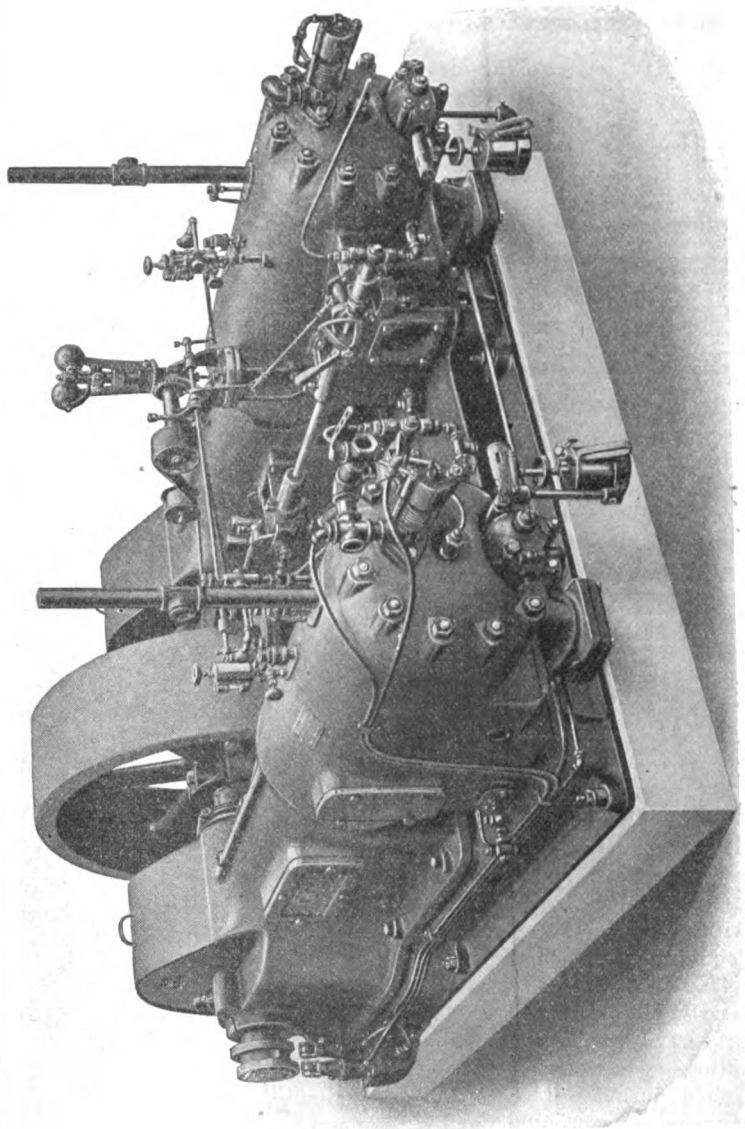
The recently developed and constantly increasing enthusiasm among the engineering fraternity for the oil engine is another tribute to that machine as a factor in "reducing the high cost of power." For with the price of coal steadily rising, manufacturers have been giving more and more serious attention to the oil engine as the solution of the power cost problem. Its growing popularity has caused its manufacturers to predict freely that it will in time supersede the steam engine as the most common means of generating power.

All users of power, electrical, steam or otherwise, are coming to understand that the oil engine is likely to be the standard power generating machine of the future. Ocean going steamships are now built with single units and submarines are equipped with high speed engines for 4,000 mile cruises. The objective of nearly all of the oil engine manufacturers—an internal combustion engine operating on inexpensive fuels—has not changed during the years, but the many improvements brought out by the Chicago Pneumatic Tool Company in its "Giant" engine has made the oil engine of a few years ago seem as antiquated as the "one lung" high wheeled automobile that we sometimes see at motor shows.

Simplicity has been the keynote of

every improvement in the Giant engine, and the result has been a rugged machine which an untrained man can easily understand and which can be operated on low-grade and inexpensive fuels. A few of the oils recommended are 28 degree Beaume Fuel Oil, Solar Oil, Twenty-seven plus, Calol, Diesol, Star Oil and all of the distillates between kerosene and lubricating oil. These oils are from 28 to 40 degrees Beaume scale, are refinery products and when furnished by a reliable company will be found free from acid, grit or anything that will tend to destroy the cylinder. They are all inexpensive and easily obtainable. The simplicity of the Giant has been greatly enhanced by the elimination of valves, carburetors, magnetos, batteries and other complicated devices. As it stands today, this engine has been recognized by some of the foremost authorities as the simplest, most compact and economical oil engine on the market. Some of their reasons may serve to clear up some much-mooted questions concerning the superiority of different oil engine designs.

The Giant is a two cycle engine receiving an impulse every revolution of the flywheel instead of the more generally known four cycle type which receives an impulse every other revolution. The four cycle requires a much heavier fly-



Class A-DO Duplex Giant Semi-Diesel Fuel Oil Engine

wheel or higher speed than the two cycle, and in it the pressure driving the suction stroke is on one side of the bearings, while during the power stroke, it is on the opposite side. On the two cycle engine, the pressure is always in one direction. The bearings of the four cycle engine must be closely adjusted to prevent pounding, and gears, lay shafts, cams, valves, etc., must be used. As none of these parts are needed in the Giant two cycle engine, it is much less complicated, requires less attention and is much quieter in operation.

The hot plate form of ignition as used in the Giant engine has been found to be superior to the hot ball in a number of ways. Hot balls fill up with carbon and stop the engine, whereas hot plates do not. Hot balls burn out quickly and frequently burst, while hot plates are not subject to any bursting pressure and will not burn out as quickly. In any engine using hot ball ignition, the oil in being injected into the cylinder comes in contact with very little heated iron as compared with the hot plate method as used in the Giant. Because of the small heated surface of the hot ball, it takes much longer to gasify the oil, and consequently it must be injected into the cylinder much earlier in the stroke than when using a hot plate and liner. The earlier the oil is injected into the cylinder, the more danger there is of pre-ignition and excessive initial pressure. The rapidity of ignition in the Giant allows the fuel to be injected into the cylinder much later in the stroke, thereby avoiding the abnormal pressure incident to pre-ignition.

A plunger pump is used instead of a carburetor to inject oil into the cylinder of the Giant engine, because no engine in which oil is delivered to the cylinder through a carburetor can burn anything heavier than kerosene. When a carburetor is used, the fuel is carried into the cylinder and compressed with the air. In such an engine, the fuel while in the crank end of the cylinder is apt to be ignited when the transfer port

opens, and cause what is commonly known as backfiring. With the carburetor, electric ignition with its combination of batteries, magnetos, coils, spark plugs, wiring, etc., must be used, whereas in the Giant engine, no electric ignition is necessary. The ignition is automatic and there can be no pre-ignition because the oil is injected into the cylinder by a pump at the time ignition should take place. The plates can always be kept at a very high temperature and this will prevent late or no ignition.

Another difference in oil engine design lies in the use of the crosshead. In any two cycle engine not fitted with a crosshead, it is necessary to have the crankcase as nearly air tight as possible. Compression of air for scavenging the cylinder must be done in the crankcase, and if it is not tight, air will leak out and impair the scavenging, and hence the proper operation of the engine.

Certain advantages of the belt driven governor,—a feature of the Giant engine—over a shaft governor, may be enumerated. The extra length of shaft required when a shaft governor is used greatly increases the overhang of the flywheel and belt pulley. This overhang should be as small as possible. All the length of shaft needed when a belt driven governor is used is the width of the belt, which is much less than that required by the shaft governor. To change speed when using a shaft governor, the engine has to be stopped and the tension of the governor springs adjusted. When a belted governor is used, the speed of the engine can be changed while it is running and the desired speed quickly attained.

The oil engine as a means of reducing power costs is well established. Compared directly with the steam engine, it is found that the weight of the steam engine is much greater and that it requires much more headroom and floor-space than the oil engine. There is always a great waste of steam in producing a given horsepower and the delivery of power is always dependent upon the



Hauling a Giant Fuel Oil Engine under Difficulties. An 80-horsepower Unit Just Arriving at the Butte Roller Mills, Butte, Nebraska.

skill of the operator. In addition to this, the operating expense of the steam engine is high because fires must be kept up whether power is needed or not, whereas an oil engine requires no fuel when the engine is idle. The broadening demand for oil engines has caused production to increase substantially, and so it is not surprising that among the many different types on the market there are many inefficient machines. This condition should lead the prospective purchaser to investigate the oil engine field thoroughly before making any contract. An investigation much like the one here outlined for the Giant engine, but covering not only features of design but of materials and workmanship as well, will go a long way toward helping to make the selection a wise one.

Reducing the High Cost of Living

The Congressman had received ten applications for pea-seed from one constituent, and when the eleventh came he wrote:

"I am sending you the seeds, but what in Heaven's name are you doing with so much pea-seed? Are you planting the whole state with peas?"

"No," came back the answer, "we are not planting them at all. We are using them for soup."

Twelve Horses Haul This Giant.

An 80 H. P. Giant Fuel Oil Engine was sold to the Butte Roller Mills, Butte, Nebraska. Unfortunately Butte is not on a railroad, being three miles from Anoka, Nebraska, the nearest railroad station. In due course the railroad delivered the engine to Anoka. The problem then was: How can it be hauled to Butte? As it weighed 28,000 pounds, ordinary means of conveyance would not be strong enough.

After various plans were considered and rejected, it was decided to hitch two strong wagons together tandem fashion and the engine so loaded as to distribute the weight over both of them. The outfit was then hauled by eight horses as shown in the illustration, although at times twelve horses were needed to overcome bad places in the road.

The trip was made from Anoka to Butte without incident, except that the county commissioners objected to the load being hauled over one of the wooden bridges on their route. The engine was hauled over, however, regardless of the commissioners' protests and although the bridge buckled up under the load, it straightened out again all right after the outfit had passed.



Asbestos Mine of the Arizona Asbestos Association.

Operating an Asbestos Mine with Fuel Oil.

Asbestos or Mineral Wool is one of the most mysterious and curious minerals known. It is unchanged by flame or by temperature of 1,500 degrees Fahrenheit. It defies erosion and wear. It resists the action of oxygen and acids. It is a non-conductor of electricity and insulates against heat or cold.

Asbestos is found in the form of rock, as heavy and dense as marble. When examined it is found to consist of a mass of silky fibres, a floss-like thistle down, so light it will float on water.

This wonderful mineral was not unknown to the heroes of ancient history. Charlemagne had a table cloth made of this substance and the great Khan had table napkins made from Asbestos. Today it has a wide variety of uses. It is made into great theatre curtains. It is spun into thread so fine that a hundred yards weigh but one ounce. It is woven into cloth like linen or into heavier fabrics as thick as a finger. Fire-proof clothing is now being made in large quantities from Asbestos.

It is combined with rubber for engine, pump or compressor packings and with cements to withstand fierce furnace

heats. It is made into shingles, roofings, brake lining, insulations, cements, electrical devices, tapes, yarns and hundreds of products that enter every avenue of science and the useful arts.

There are several Asbestos mines in the United States, one of the largest of these being owned by the Arizona Asbestos Ass'n, in Axle Creek Canyon, located about 40 miles northeast of Globe, Arizona.

This mine is now operating six rock drills, the air for which is supplied by a 14-9½x14" "Chicago Pneumatic" Simplate Valve Fuel Oil Air Compressor, which is furnishing them compressed air at a remarkably low cost. The location of the compressor is shown by Fig. 1 in the illustration. Fig. 2 shows the location of a 12 Horse Power Giant Fuel Oil Engine which operates the asbestos mill. We are indebted to Mr. N. A. Nelson, Supt., of the Arizona Asbestos Association for the photograph.

Willie was being measured for his first made-to-order suit of clothes.

"Do you want the shoulders padded, my little man?" inquired the tailor.

"No," said Willie, significantly, "pad the pants."



Drilling Holes in Concrete Floor with Duntley Electric Hammer Drill in Modern Method of Carpet Laying.

The M. H. Pickering Company of Pittsburgh, Pa., had the contract for furnishing carpets to be used in the City-County building of that city.

The floors of the City-County Building are constructed of concrete and in order to secure the carpets to the floors it was necessary to drill three-eighth inch holes into the floor about one and one-half inch deep, into which was inserted an expansion bushing of lead composition. This expansion bushing was hollow on the inside, into which was inserted a small brass ferrule flush with the floor. The carpets were then laid and tacks with brass heads about one

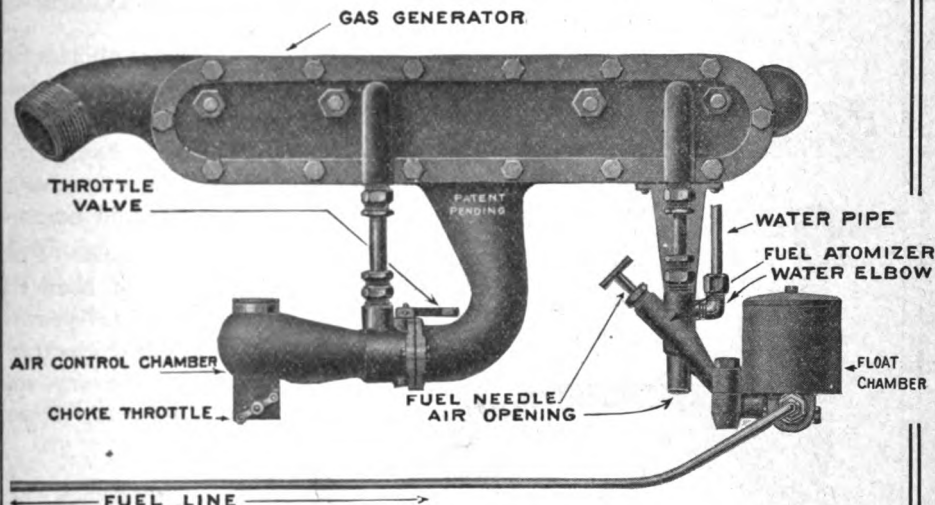
inch long were put through the carpet down into the brass ferrules to secure the carpet.

The drilling of the holes was a considerable problem as there were 60 rooms to cover with carpet, necessitating 90 holes in each floor. They started to do the drilling with an ordinary drill but found this too expensive on account of the abrasive effect the concrete had on the twist drills.

They then purchased a Duntley Electric Hammer Drill. This was fitted with a small star drill steel and the holes were put in the floor without any apparent effort whatever.

Operate Your Ford Car or Truck on Half Kerosene and Half Gasoline and Save Half Fuel Cost

GUARANTEED SATISFACTORY OR MONEY RETURNED



We guarantee the Duntley Gas Generator to save you 50% of your fuel cost.

It enables you to use a 50-50 mixture of gasoline and kerosene, or 75% kerosene and 25% gasoline, or straight kerosene, straight gasoline or distillate, or any mixture of hydro-carbon fuels.

It gives you more mileage per gallon. It increases speed.

It cools, cleans and protects your engine.

It does away with your carburetor and all carburetor troubles.

It distills your fuel and generates a gas of wonderful power and efficiency.

DUNTLEY GAS GENERATOR

No changes required except to remove carburetor and manifold
Shipped complete, ready to install. Price complete, \$35

WRITE FOR LITERATURE

Chicago Pneumatic Tool Company

1615 MICHIGAN AVENUE

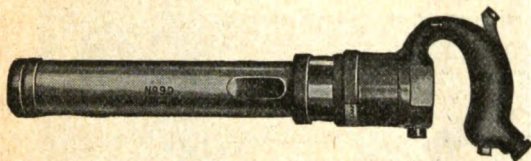
Chicago

Agents wanted for unoccupied territory

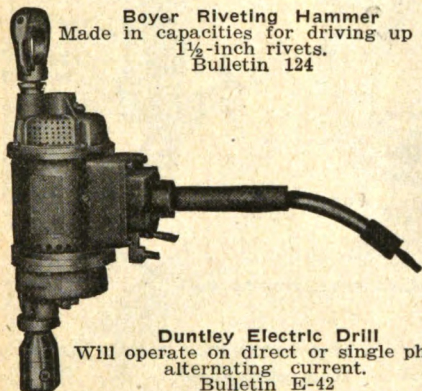
Branches & Service Stations
Everywhere

When writing to advertisers please mention Ideal Power.

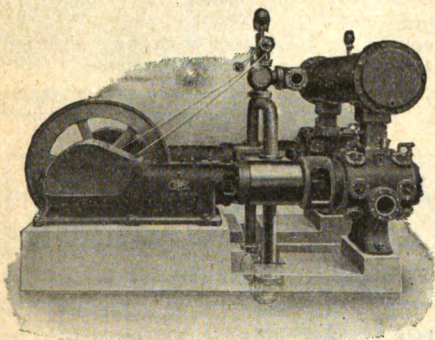
SPEED UP WITH PNEUMATIC



Boyer Riveting Hammer
Made in capacities for driving up to
1½-inch rivets.
Bulletin 124



Duntley Electric Drill
Will operate on direct or single phase
alternating current.
Bulletin E-42

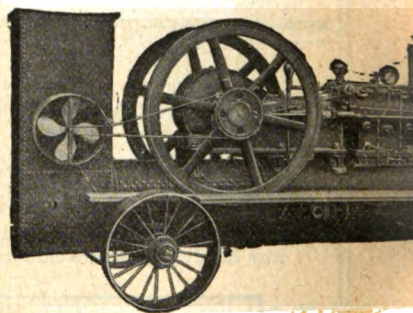


**Class O-DSC Chicago Pneumatic
Simplat Valve Compressor**
Regularly designed for 100 pounds
air pressure and relatively low-pres-
sure steam. Can be supplied in ca-
pacities from 375 to 1,700 cubic feet.
Bulletin 34-M

**1014 Fisher Bldg.
Chicago**

The present shortage of labor and the tremendous pressure that is being brought to bear upon production is directing the attention of manufacturers to reliable labor saving tools and machinery.

The CHICAGO PNEUMATIC line which has been the standard for twenty-five years comprises pneumatic and electric tools and appliances of every description. Boyer Pneumatic Riveting, C



**Chicago Pneumatic Class
Compressor (tank mounted)**

The Chicago Pneumatic Valve Compressor (tank mounted) may be operated on Fuel Oil or Gasoline.

Direct connected, automatically regulated, self-contained. High pressure cooling system.

Made in four sizes from 375 to 1,700 cubic feet per minute to 300 cubic feet per minute capacity.

Bulletin 34-K

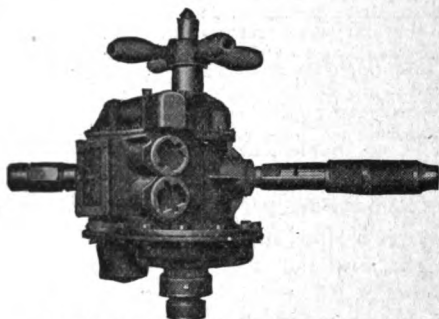
CHICAGO PNEU

PRODUCTION

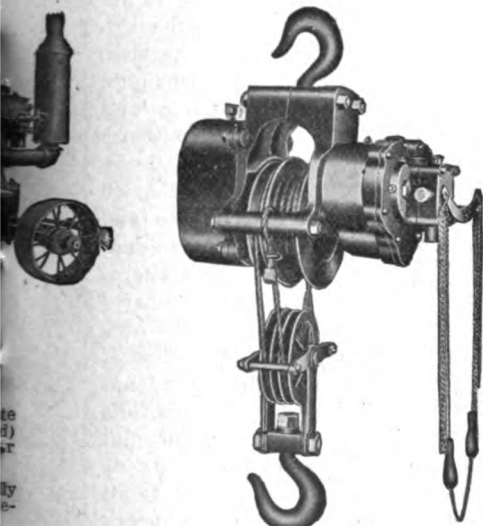
ND ELECTRIC TOOLS

ping and Calking Hammers; Little Giant Air Drills and Grinders; Duntley Electric Drills, Hammers, Hoists and Grinders; Chicago Pneumatic Simplate Valve Air Compressors; Giant Fuel Oil, Gas and Gasoline Engines; Hummer Hammer Rock Drills; Chicago Pneumatic Water Lift Pumps; and Little Giant Motor Trucks.

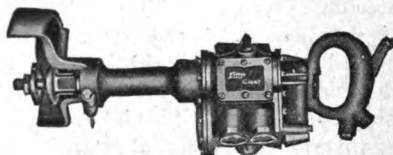
Write for Bulletins



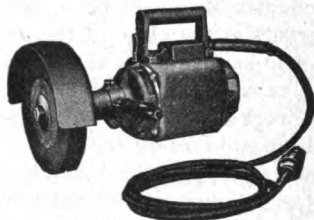
Ball Bearing Little Giant Drill
Furnished either reversible or non-reversible. Capacity, 2 inches.
Bulletin 127



Chicago Pneumatic Geared Hoist.
Made in capacities from one to five tons.
Bulletin 132



No. 10 Little Giant Grinder
For light work, speed light, 4,200 R. P. M.
Bulletin 127



Duntley Electric Portable Grinder.
Ball bearing, operating on direct or alternating current.
Bulletin E-39

MATIC TOOL CO.

**52 Vanderbilt Ave.
New York**

IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air
and Electrical Appliances

BY THE

IDEAL POWER PUBLISHING CO.

1014 FISHER BUILDING

CHICAGO, U. S. A.

C. I. HENRIKSON

Editor

VOL. XII DECEMBER, 1917 No. 6

TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year
Other Countries in Postal Union, 50 cents per year

ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our
subscription list.

Buy Labor-Saving Machinery Now.

There is a labor shortage in this country right now and it has been with us for months. The labor shortage will certainly become much more pronounced as the draft continues. And that isn't all. Canada and France are both appealing for American laborers, and are getting some of them, too. They will get more later on. Our own military labors, back of the lines, will require skilled and unskilled laborers by the thousand.

Clearly this is the time for manufacturers and contractors to buy labor-saving machinery. Our labor shortage is probably only beginning. It will doubtless continue after the war and may very easily be worse then than now. It appears likely that more aliens will leave this country than will be replaced with immigrants at the close of the war. Europeans who survive the war will stay at home to rebuild their wasted cities and public works. Their countrymen who have been sojourning with us will go back home to help in the building of a new Europe, to visit and to view the ruins.

It is a safe forecast that we will have a labor shortage in this country for some years to come. In addition to what we have enumerated, new lands are being opened up which will be farmed after the war. Our growing foreign trade will keep on growing and will call for

more and more labor. We will also have our war losses.

American manufacturers and contractors have never had an easier decision to make than that they should buy labor-saving machinery now.

Sons of President and Treasurer Have Enlisted.

Crawford A. Duntley, son of President W. O. Duntley of the Tool Company, and LeRoy Beardsley, Jr., son of LeRoy Beardsley, Treasurer of the Tool Company, are enlisted in Uncle Sam's service. Mr. Duntley is a sergeant in the ordnance detachment, Rock Island Arsenal, and Mr. Beardsley is in the coast guard service, stationed at Ft. Trumbull, New London, Conn.

The United States and the Stars and Stripes.

Long may they prosper and wave, continuing faithful to the inheritance left by the fathers of the Republic; gathering into the bosom of the great family, the children of all nations; adding to her territory, not by the sword of the soldier, or the subtlety of the statesman, but by the diffusion of her principles, and the consonance of her simple laws and institutions, with the good sense and purer aspirations of mankind. Long may they prosper, each year adding to her stock of strength and dignity and wisdom; and high above her countless fleets and cities, even to the last generation may the monument of her liberty be descried, in the darkest storms which now shake the thrones and dynasties of the old world; long may they stand unscathed in the bleakest night which falls upon the arms of a determined people; may they shine forth like the cross or the star in the wilderness, and be to all an emblem of hope, a shrine of independence, and a signal of salvation.

SITUATION WANTED—Position wanted by experienced man. Has filled positions as general foreman and general superintendent. Understands foundry work. Fully understands the repair and maintenance of air compressors and pneumatic tools. Thirty-five years with one employer. Supervised work of large number of men. Address Ideal Power, Ad. No. 25.

Roll of Honor

THE following employes of the Chicago Pneumatic Tool Company have joined the colors and have pledged themselves to bring glory to the Stars and Stripes in the world war for democracy.

GENERAL OFFICE

BRYANT, GEO. F.
GILES, F. E.
HOPPE, A.
JOHNSON, NORMAN
KITTOE, K. H.
PUNNETT, T. R.
SCHUSTER, I. S.
STALEY, M. L.
SWEENEY, E. F.
WAIT, CONANT
WOOLF, PERCY (British Navy)

CHICAGO HEIGHTS PLANT

BIGGARS, J. W.
BRUNDAGE, P.
DILL, W.
ERVIN, R.
GREINER, R.
HERMAN, STEVE
KORDECK, E. L.
LATOUSKI, S.
MAY, J.
MEYERS, C.
MEYERS, J.
MORTON, V.
NEAL, N.
PEDDYCORD, M.
RODDY, R.
SATTOZALEIN, D.
VAN KEUREN, LEE

CLEVELAND PLANT

ALF, ANDY
BECAN, FRANK
BECK, HENRY
BOHNSACK, ALBERT
COLE, C. C.
HOLLAM, WILFORD
KMETZ, FRANK
McCLINTOOK, MILES
MILLER, W. B.
SPERRY, HERMAN
SUTTON, LEE
SWEGEL, JOS.
WISMIEWSKI, BEN

DETROIT PLANT

ANDERSON, EARL
BARBERI, JOHN
ELLERHOLZ, WALTER
FABER, ORIN
JABLOWSKI, STEVE
MULHOLLAND, JAMES
PAGE, HARRY
STALKER, JESSE

ERIE OFFICE

SMITH, G. R.

FRANKLIN PLANT

ALLEN, GEORGE
BROWN, WM. B.
CLYNES, C. E.
COTTERMAN, FLOYD
COX, F. S.
DAILEY, MAX
FELT, RUSH
HOFFMAN, COULTER H.
HOFFMAN, REX
JOHNSON, HARRY J.
JOHNSON, HARRY W.
PORTER, JAMES
ROSS, GEORGE B.
ROSS, JOHN D.
SPEER, J. HALLOCK

NEW YORK OFFICE

ALDCORN, CHARLES
ALLEN, G. E.

PITTSBURGH OFFICE

CANBY, J. L.

ST. PAUL OFFICE

LEWIS, ROBERT D.

SAN FRANCISCO OFFICE

DeHART, D. C.
GANS, HARRISON
GILMEISTER, L. J.
GRANGER, F. E.
MITCHELL, E. C.
STEPHENSON, L. P.



"The Little Giant does everything that comes up," said the storekeeper of a prominent railroad. "If there is a car around the yards that has a small supply of freight, the truck takes care of it rather than switch the car back and forth through the yards. If castings are needed or a ton and a half of material, the Little Giant is employed to do this work. It cuts out hiring three wagons and gives the railroad complete control of the service. It has made itself indispensable because of the many tasks it performs that were not in the first place intended to be a part of its work. All of the supplies are brought down on this truck at a marked saving of time and expense."

Motor Trucks Will Supplant Freight Trains.

A press dispatch from Washington dated November 9th states that motor trucks are to supplant freight trains for hauls of less than 200 miles throughout the United States for the period of the war. The Council of National Defense has named a committee to co-operate with the railways, steamship lines and inland waterways in substituting trucks to this end and to aid state and national road commissions in providing roads for this transportation.

Members of the committee are: Roy D. Chapin, chairman, president Hudson Motor Company; Logan Walter Page, Department of Agriculture; Henry C. Shirley, chief engineer state roads commission of Maryland, and George H. Pride, president Heavy Hauling Company, New York.

A committee of automobile manufacturers, co-ordinating the automobile fac-

ories of the United States in war work, was also named as follows: Alfred Reeves of New York, Hugh Chalmers, John R. Lee and K. W. Copeland of Detroit.

The Busy Wop

An Italian, having applied for citizenship, was being examined in the naturalization court.

"Who is the President of the United States?"

"Mr. Wils'."

"Who is the Vice President?"

"Mr. Marsh'."

"If the President should die, who then would be President?"

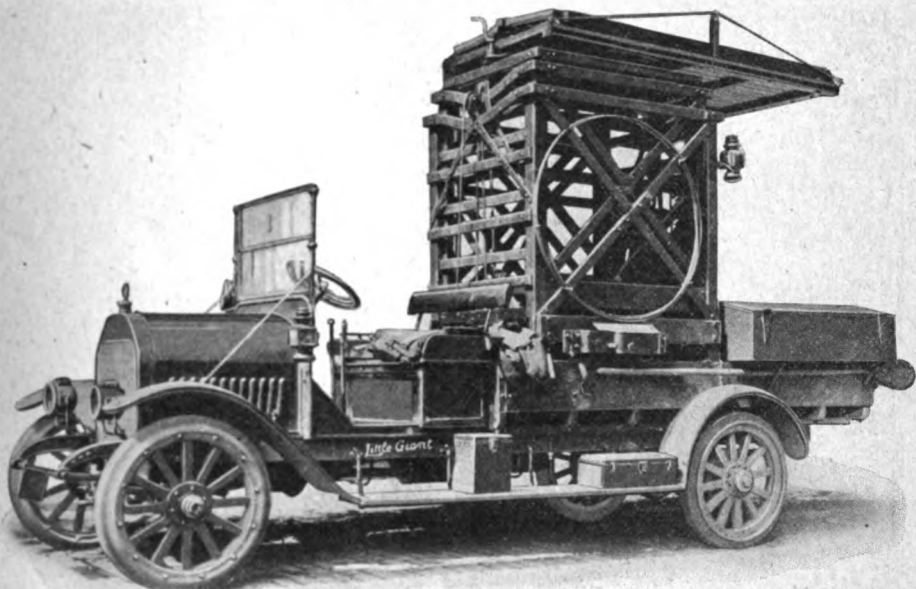
"Mr. Marsh'."

"Could you be President?"

"No."

"Why?"

"Mister, you 'scuse, please. I vera busy worka da mine."



Little Giant one-ton truck, owned by the Cleveland, Painesville and Eastern R. R. Co., fitted up as a trouble truck. This apparatus is designed to open up to the height necessary to repair a trolley wire and telescopes to size shown. It has been in operation at Willoughby, Ohio, for some time. They also have a trolley car equipped the same way but the Little Giant is able to get over the ground more quickly, as it does not have to pass cars on switches nor interfere with the schedule of the road.

Enlarging the Sphere of the Motor Truck.

A report dated November 23 states that an army truck train route from the central west will be established soon to move war supplies to seaboard. Development and co-ordination of transportation facilities to relieve congestion in moving war supplies, including the proposed truck route, are being worked out between the national defense council of the quartermaster general of the army, the shipping board, and the transportation systems of the country.

The problem of moving war supplies to equip the army at home and the forces in Europe is already too heavy for the railroads and congestion of traffic is increasing. The new motor truck transport route is designed to relieve the eastward freight movement, and steps to inaugurate it will be taken immediately.

The production of 10,000 motor trucks for internal transportation purposes is

now under consideration by the government.

A pathfinding automobile has left a middle western city to map out a practicable route to the Atlantic seaboard.

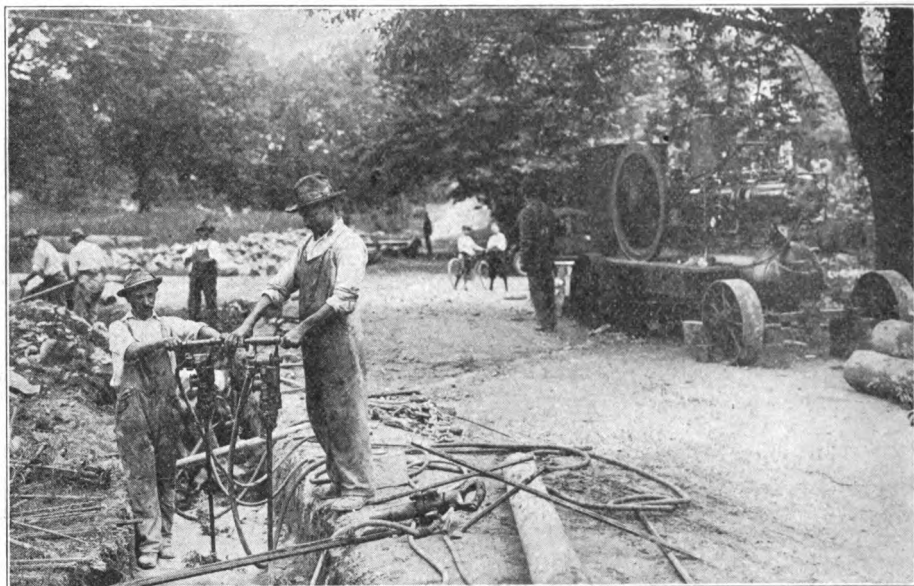
When the trains are placed in operation they will consist of thirty-four trucks, including twenty-seven cargo carriers, two gasoline tankers, one baggage truck, one field kitchen, a repair truck, an officers' car, and two motorcycles. There will be one lieutenant and seventy-six enlisted men attached to each train.

Explicit.

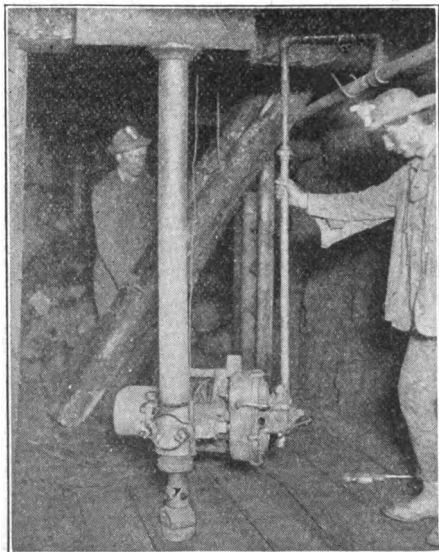
Country Lady—"I've been expecting a packet of medicine by post for a week, and haven't received it yet."

Post Office Clerk—"Yes, madam. Kindly fill in this form, and state the nature of your complaint."

Lady—"Well, if you must know, it's indigestion."



Hummer Drills at work digging trenches into solid rock for water mains for the Hackensack Water Company, Hackensack, N. J. A Chicago Pneumatic Portable Gasoline Driven Air Compressor is supplying air. The combination of a Chicago Pneumatic Portable Compressor with a battery of Hummer Self-Rotating Hammer Drills cannot be beaten on work of this character and builders of water works are rapidly adopting them as standard equipment.



Chicago Portable Mine Hoist mounted on column hoisting timber from main level to intermediate levels above, Caspian Mine, Iron River, Mich.

CHICAGO PORTABLE MINE HOIST

The Portable Mine Hoist, while designed especially for use in mines, has a very wide range of usefulness in construction and contracting work of all kinds. In mining work it solves the problem of economically raising and lowering timber and rock in raises, winzes and stopes. It will haul cars in drifts and tunnels and lower Rock Drills, mountings and drill steel from level to level. In construction work it is a general utility device, raising and lowering machinery and materials quickly and safely, and can be set up or torn down in a few minutes.

Bulletin 149 gives all details—
Send for it and get our prices.

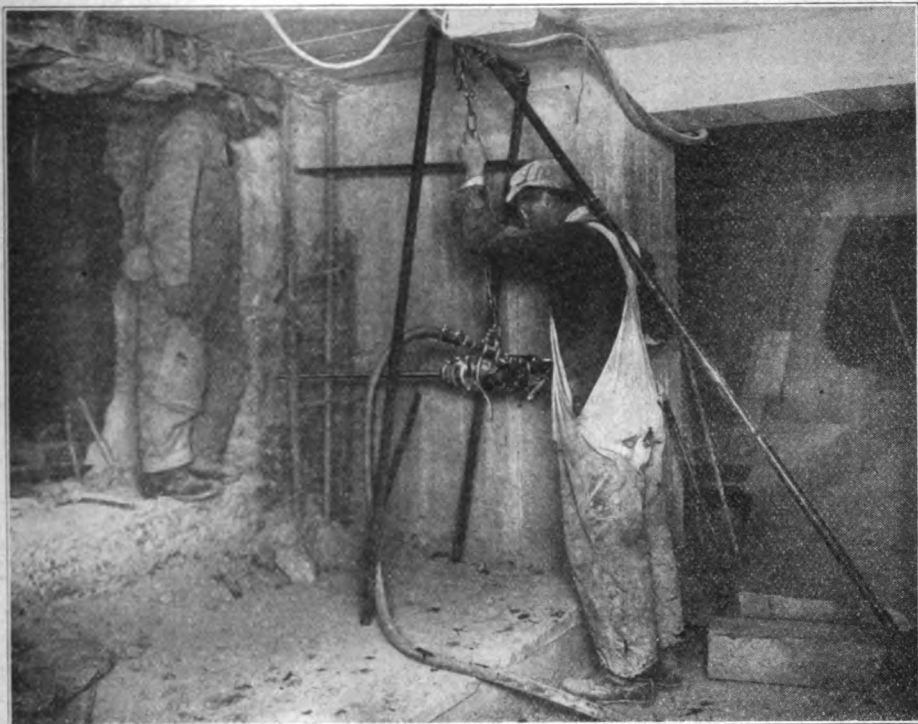
Chicago Pneumatic Tool Co.

1014 Fisher Bldg.
CHICAGO

52 Vanderbilt Ave.
NEW YORK

Branches Everywhere

When writing to advertisers please mention Ideal Power.



Scene showing B-66 Hummer Hammer Drill in use by the Hugh Nawn Construction Company, Boston, which is building the Boston subway extension. It is drilling through a concrete wall 3 feet 6 inches thick. The hole through the wall was made in 30 minutes and 30 seconds.

Unintentional Oversight.

Two lawyers before a country justice recently got into a wrangle. At last one of the disputants losing control of his temper, exclaimed to his opponent: "Jim Rogers, you are the biggest jackass I ever set eyes upon!"

The justice pounded the desk and called loudly: "Order! Order! You seem to forget that I am in the room."

Ripe.

Waiter, (watching customer who had ordered boiled eggs): "Weren't they boiled long enough?"

Customer: "Yes, but not soon enough."

Essay by Willie on the Income Tax.

I got a dog. His name is Tax. I opened the door and income Tax.

All For Nothing.

A woman entered a Chicago savings bank and placed \$50 in front of the teller. He pushed out the book for her signature and said: "Sign on this line, please."

"Me whole name?"

"Yes, ma'am."

"Before Oi was morried?"

"No, just as it is now."

"An' me husband's name too? May the saints rist him in glory!"

"You should sign your name Mrs., followed by your husband's name; or Mrs., your Christian name and then your husband's name; or Mrs., and your husband's full name; or, you might simply sign your Christian name and your husband's surname. Write it as you are in the habit of signing it."

"Oi can't wroite."



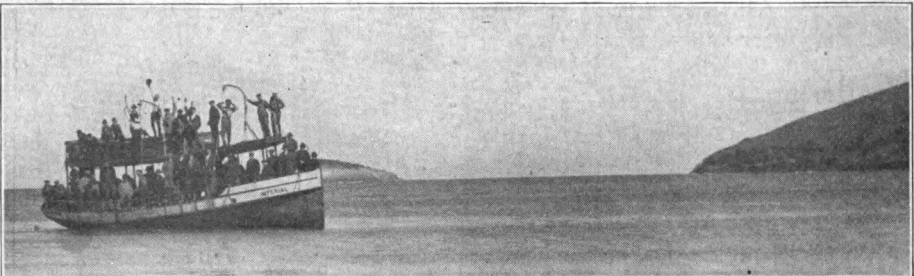
Little Giant Picnic Party on Catalina Island—Demonstrating a Remarkable Spirit of Camaraderie and Proving it is Possible to Mix Pleasure with Business.

A Little Giant Picnic.

Although it is true that "business is business" this does not mean that business need be entirely devoid of sentiment and pleasure. Mr. H. L. Miller, who represents the Little Giant motor truck on the Pacific Coast, although a keen business man, has been gifted with the knack of mixing business and pleasure in just the right proportions to get the most out of each. His latest stunt was to organize a Little Giant picnic for 75 Little Giant truck owners, drivers,

and boosters. The trip was made from the Little Giant garage in Los Angeles to San Pedro, California, in Little Giant trucks, it requiring two Model 16, one Model 15, and one Model H to carry the party and provisions. The trip from San Pedro to Catalina Island was made on the boat "Imperial." The following account of the trip is given in Mr. Miller's words:

"All parties were on hand at the Little Giant Garage at 6 A. M., and at 7:30 we were at San Pedro, at which place the



My Good Ship "Imperial" with Little Giant Picnic Party Aboard—on the Way to Catalina Island—Pacific Coast Distributor H. L. Miller's Idea of "Driving Dull Cares Away."



Little Giant Picnic Party on Way to San Pedro where they Embarked for Catalina Island.
A Bunch of Little Giant Enthusiasts off for a Good Time.

Imperial was waiting for us. All provisions were loaded on while our five-piece orchestra played 'Aloha.'

"Mr. Teddy Hobgood was unanimously elected Captain of the boat and appeared on the scene in a Captain's uniform.

"Our provisions consisted of plenty of beans, sandwiches and such items as are considered necessities at a picnic.

"The crowd had a most delightful time while crossing the channel, the band playing most of the time.

"We made a landing at the north end of the Island, at which point we were all taken ashore in the lifeboats and a group picture was taken. We had our lunch at this point and after fishing the balance of the day near the small islands, we returned in the evening to San Pedro and thence to Los Angeles.

"About five hundred pounds of deep sea fish were caught, which made an ample supply for all those aboard.

"After we had returned to the city, everyone expressed his appreciation of the excellent time he had and gave three rousing cheers for the Chicago Pneumatic Tool Company and Little Giant Trucks. They especially request that we have another party at an early date."

Try This On Your Ukelele.

Good salesmanship is selling goods that won't come back to customers that will.

Operate Little Giant Trucks on Kerosene.

Irwin Bros., of Chicago, have the contract for supplying the Great Lakes Naval Training Station at Lake Bluff, Illinois, with meats and provisions. In order to take care of this business, they make three trips a week from Chicago, using Little Giant two-ton trucks, equipped with the Duntley Gas Generator. The round trip from Chicago to Lake Bluff is eighty miles. They use a fuel mixture of 60% kerosene and 40% gasoline, and make the round trip over severe grades and rather poor roads, on an average of ten miles per gallon of fuel, at an approximate cost of \$1.06 for fuel for the trip. They confess that the truck making this trip is frequently overloaded as it carries nearer three tons than two tons.

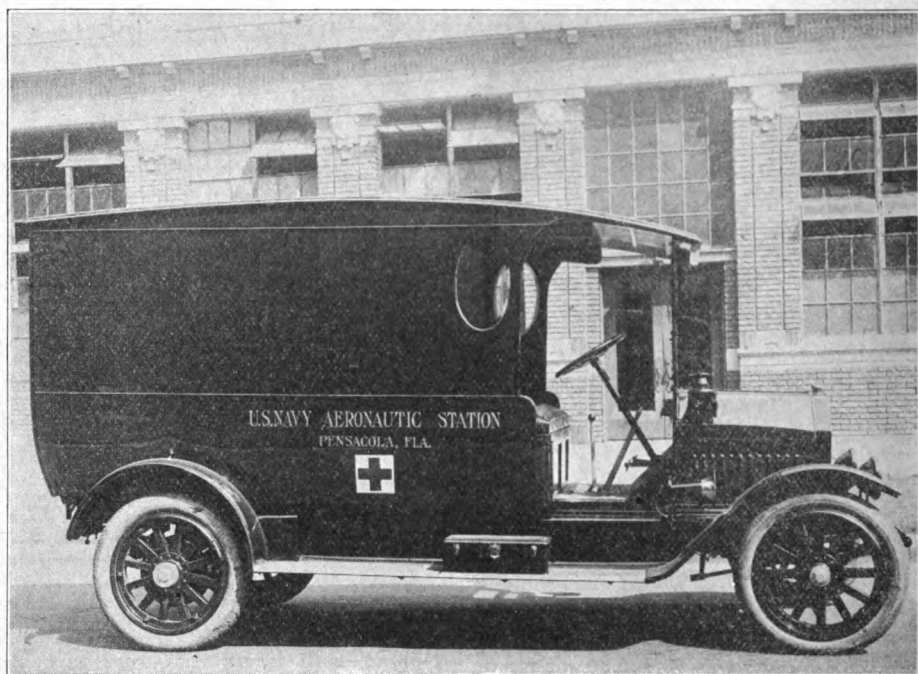
The day of kerosene as a motor fuel has arrived. Hundreds of Little Giant trucks are proving it in all parts of the country.

Above the Footlights

"Ever notice the expression on the ballet dancer's face?"

"No!"

"Look at it the next time!"

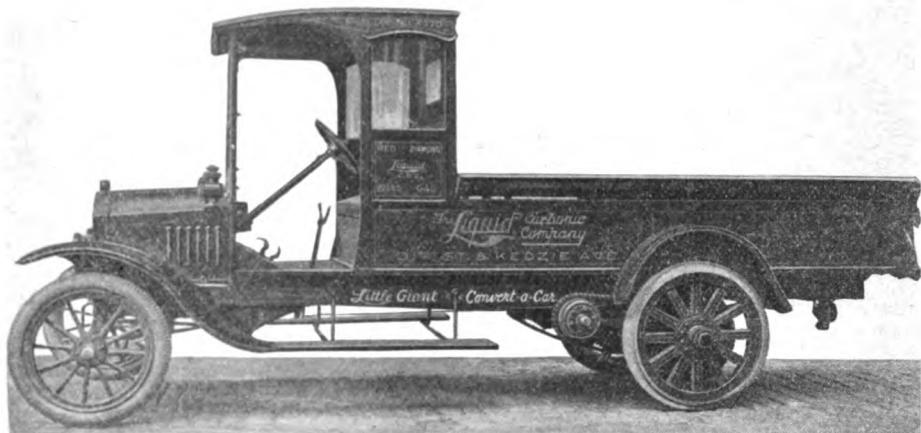


A Model 15 Little Giant in the Ambulance Service at the United States Naval Aeronautic Station, Pensacola, Florida.



A BUSY LITTLE GIANT IN BUS SERVICE

A Model 16 two-ton Little Giant hauling 45 passengers on a trip from Sixtieth and Market streets, Philadelphia, over the Chester Pike to Eddystone, dropping these workmen off at the Remington Arms plant, Baldwin Locomotive works and other plants. It makes this 14-mile trip four times in the morning and four times at night, hauling both the day and night shifts to these plants.



Little Giant Convert-a-Car Used by the Liquid Carbonic Co., Chicago. The Little Giant Convert-a-Car is the Only Ford One-ton Unit Built by a Truck Manufacturer

California—the Automobile State of the Union.

Citizens of the Golden State pride themselves with reason on their progressiveness. This is emphatically shown in the latest automobile statistics from California. Counting motor trucks and pleasure cars they show the astonishing total of 275,000 machines. For the state population of 2,750,000 people, this means a machine for every ten persons, counting men, women and children. San Francisco has 26,000 machines while Los Angeles has 76,000 machines.

Telephones Unknown in Rural Ireland.

Patrick, lately over, was working in the yards of a railroad. One day he happened to be in the yard office when the force was out. The telephone rang for some time, before Pat came to the conclusion that it ought to be answered. He approached the instrument cautiously, and slowly put the transmitter to his mouth, as he had seen the "boss" often do.

"Hillo, there," he called.

"Hello," answered some one at the other end, "is this eight-six-ought-four-eight?"

"Aw, g'wan; phat d'ye think Oi am, a box car?" replied Pat.

Queer Girls.

The modesty of Fanny Fee
Leaves Dolly's far behind,
For if a man is looking she
Won't even change her mind.

—Detroit Free Press.

What would you say of Kitty Cooke?
Her plight was most distressing.
She feared to serve her salad, lest
Her guests would see her dressing.

—Auto-Suggestion.

Innocent Ida of Oneida
Who never did things by halves
Couldn't abide a bareback rider,
Nor the stock show's display of calves.

W. P. P.—Ideal Power.

Sweet Marie of Kankakee,
Her innocence well proved,
Could never be around to see
A transmission belt removed.

—M. S., Franklin, Pa.

(Further contributions invited.—Editor)

The Function of the Stomach.

The teacher was examining the class in physiology.

"Mary, can you tell us," she asked "what is the function of the stomach?"

"The function of the stomach," the little girl answered, "is to hold up the petticoat."



Home—the burying-place of our manners.

Money is like seed. It does you no good unless you scatter it.

A fellow with ladylike manners is seldom chosen to fill a man's job.

It isn't so much what you do that wins success as what you avoid doing.

Men are like wells. The deeper they are the harder it is to pump them.

The meek will of necessity have to inherit the earth—if they ever get it.

Some fellows would rather find a mistake on the boss than get a ten dollar raise.

There is only one advantage in borrowing trouble, you never have to return it.

An amateur is a very young person who believes he keeps all the professionals grieving.

One swallow doesn't make a summer, but one swallow too much often produces a fall.

The difference between a skin-deep beauty and the other kind is that you get the other kind at the drug store.

Clothes don't make the man, but a seedy suit on a bright chap is a pretty good indication of misdirected effort.

Real heroes act as their own press agents.

Even if the worm does turn what does it benefit him?

A man of letters may be jealous if his wife gets a few.

Give some people their pick and they will pick flaws every time.

Let's not be overanxious to grasp an opportunity that is too hot.

He who thinks only of himself hasn't any too much to think about.

Many reputations blow up when a political campaign is in full blast.

Political strife isn't very far from what a famous general once said war was.

We all have a soft spot in our heads at birth—and some of us never lose it.

Many a man would feel like a fish out of water if by chance he should manage to get out of debt.

One shouldn't get discouraged because he is unable to answer a child's questions. There are others.

A nice thing about being a millionaire is the anxiety of all the merchants to sell you goods on credit.

An old bachelor says that the vocalizing at a wedding is even more depressing than the singing at a funeral.

The Chicago Pneumatic Tool Co.

MANUFACTURERS OF THE FOLLOWING

PNEUMATIC TOOLS, APPLIANCES, ETC.

After Coolers	Hammer Drills, Electric
Air Compressors	Hammer Drills, Pneumatic
Air Injectors	Hammers, Riveting
Air Motors	Hammers, Chipping and Calking
Air Receivers	Hammers, Stone
Air Jacks	Hoists, Duntley Electric
Air Lifts	Hoists, Pneumatic Geared
Airoilene Oil	Hoists, Straight Lift
Airoilene Grease	Holders-on
Angle Gears, Boyer	Hose, Special High Grade
Automatic Oiling Devices	Hose Clamp Tool
Chucks, Drill	Hose Couplings (Universal)
Chucks, Expanding	Inter-Coolers
Commercial Car	Motor Trucks
Cranes	Oil Driven Compressors
Drift Bolt Drivers	Oil Engines
Drills, Boyer	Railway Motor Section Cars
Drills, Hummer Hammer	Reamers
Drills, Keller	Rivet Busters
Drills, Little Giant	Riveters, Jam
Drills, Rock	Riveters, Yoke
Drilling Stands	Riveters, Compression
Elevators	Sand Rammers
Electric Drills, Duntley	Speed Recorders
Electric Grinders, Duntley	Staybolt Chucks
Gas Engines	Stone Dressers
Gasoline Driven Com- pressors	Water Lift Pumps
Gasoline Engines	Winches, Portable
Grinders, Portable Electric	

When writing to advertisers please mention Ideal Power.

They Burn Kerosene

Little Giant MOTOR TRUCKS



Forty-two U. S. soldiers and their bull dog mascot on a Model 17, 3½ ton Little Giant Motor Truck owned by the Commissioners of Athens County, Ohio and sold them by E. A. Van Den Broek, Little Giant Agent at Athens.

WHETHER in war or in the peaceful pursuits of industry Little Giant Trucks have demonstrated their fitness to economically solve all problems of transportation that lie within their capacity.

Equipped with DUNTLEY GAS GENERATOR, using kerosene, distillate or other low grade fuel at

Saving in Fuel Cost of 50%

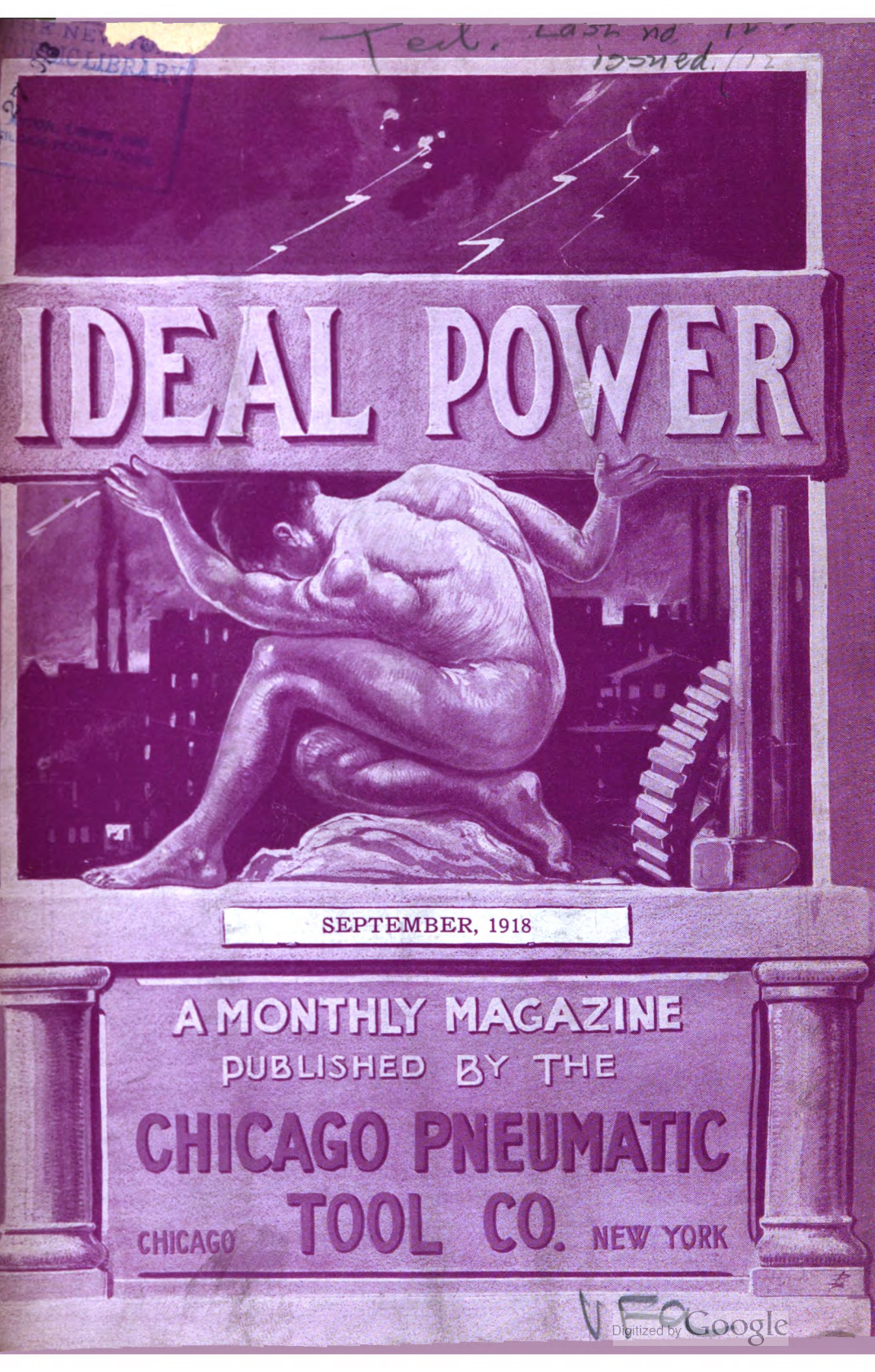
Capacities: 1, 2, 3½ Tons and Convert-a-Car (Ford one-ton truck unit)

Ask for Catalogue and Prices

Chicago Pneumatic Tool Company

BRANCHES EVERYWHERE

LITTLE GIANT BUILDING, 1615 MICHIGAN AVE., CHICAGO



IDEAL POWER

SEPTEMBER, 1918

A MONTHLY MAGAZINE
PUBLISHED BY THE
**CHICAGO PNEUMATIC
TOOL CO.** CHICAGO NEW YORK

Chicago Pneumatic Tool Co.

General Offices, - Fisher Building, CHICAGO
 Eastern Offices, 52 Vanderbilt Ave., NEW YORK

BRANCH OFFICES

BIRMINGHAM:	824 Brown-Marx Building
BOSTON:	66 Broadway
BUFFALO:	503 Ellicott Square Building
CINCINNATI:	607 Mercantile Library Building
CLEVELAND:	813-15 Engineer's Bldg.
DETROIT:	Second Ave. and Amsterdam Street
EL PASO:	303 San Francisco Street
ERIE, PA.:	12th and Cranberry Streets
FRANKLIN, PA.:	N. 13th Street
JOPLIN, MO.:	308 Wall Street
LOS ANGELES:	521 Title Insurance Building
LOS ANGELES:	241-243 S. Los Angeles Street
MILWAUKEE:	1305 Majestic Building
MINNEAPOLIS:	301 Metropolitan Bank Building
NEW ORLEANS:	853 Carondelet Street
OMAHA:	1018 Douglas Street
PHILADELPHIA:	1740-42 Market Street
PITTSBURGH:	10 and 12 Wood Street
PORTLAND, ORE.:	46-48 Front Street
RICHMOND, VA.:	1004 Mutual Building
SALT LAKE CITY:	117-19 West 2nd South Street
SEATTLE:	L. C. Smith Building
ST. LOUIS:	813-15-17-19 Hempstead Street
SAN FRANCISCO:	627 Howard Street
SAN FRANCISCO:	71 First Street

FOREIGN

Canada:	{ Montreal, Canadian Pneumatic Tool Co. Montreal, Toronto, Winnipeg, The Holden Co., Ltd.	India:	{ Bombay, Consolidated Pneumatic Tool Co., Ltd., Ram-part Row, Fort.
British Columbia:	{ Vancouver, Holden Co., Ltd., 542 Pendar St., West.	Japanese Empire:	{ Tokyo, Osaka, Seoul, Dairen. The F. W. Horne Co.
Northern Mexico:	{ (Sonora and Chihuahua). D. A. Carpenter & Co., El Paso, Texas.	Philippine Islands:	{ Manila, F. L. Strong Machinery Co., 64-68 Calle Echague.
Great Britain:	{ London, The Consolidated Pneumatic Tool Co., Ltd., Egyptian House, 170 Piccadilly, W. I.	Australia:	{ Sydney, Henry W. Peabody & Co.
Spain:	{ Paris, Anciens Etablissement Glaenger & Perreaud, 18-20 Faubourg du Temple.	South America:	{ General Sales Agents, International Railway Supply Co., 30 Church Street, New York City.
Portugal:	{ Milan, The Consolidated Pneumatic Tool Co., Ltd., via A Capellini 7.	Central America:	
France:		South America:	{ Buenos Aires, Argentina, Evans, Thornton & Co.
Italy:		South Africa:	{ Johannesburg, The Consolidated Pneumatic Tool Co., Ltd., 190 Main St.
Norway:	{ G. Hartmann, P. O. Box 1, Christiania, Norway.	Hawaiian Islands:	{ Honolulu, H. S. Gray & Co., 832 Fort St.
Sweden:			
Denmark:			
Belgium:	{ Brussels, The Consolidated Pneumatic Tool Co., Ltd., 22 Chaussee de Forest, Porte de Hal.		

When writing to advertisers please mention Ideal Power.

BULLETIN DIRECTORY

Requests for these Bulletins should be directed to our Chicago or New York offices or to our nearest branch as shown on inside front cover.

PNEUMATIC TOOLS

- 121....Pneumatic Rammers and Foundry Appliances.
- 124....Pneumatic Riveting, Chipping, Calking and Stone Hammers.
- 125....Pneumatic Yoke, Jam and Shell Riveters, Holders-on, Drift Bolt Drivers, Rivet Busters.
- 127....Pneumatic Drills, Corner Drills, Reamers, Wood Boreers, Flue Rolling and Tapping Machinery and Grinders.
- 128....Miscellaneous equipment for Pneumatic Drills, viz.: Chucks, Twist Drills, Reamers, Augers, Flue Cutters, Flue Expanders, Angle Gears.
- 129....Hose, Hose Couplings and Hose Clamp Tools.
- 130....Lubrication of Pneumatic Tools.
- 132....Pneumatic Motors and Pneumatic Geared Hoists.
- 133....Cylinder Air Hoists and Jacks.
- 296....E, ER, and ERC Little Giant Drills.

ELECTRIC TOOLS

- E-46..Heavy Duty Electric Drills—Direct Current.
- E-47..Alternating Current Electric Drills.
- E-49..Electric Grinders.
- E-50..Universal Electric Hammer Drill.
- E-51..Osborn Safety Device.
- E-52..Electric Tools for Street and Interurban Railways.
- E-53..Electric Sensitive Drilling Stand.
- E-54..Portable Electric Hoists.
- E-55..Universal Electric Drills.
- 233....Electric Tool Booklet.

AIR COMPRESSORS AND FUEL OIL ENGINES

- 34-A..Class "G" Steam Driven "Chicago Pneumatic" Compressors.
- 34-B..Gasoline Extraction Compressors and Vacuum Pumps.
- 34-C..Erecting and Operating Instructions for Class A-G Giant Gas Engines.
- 34-E..Instructions for Installing and Operating Class N-SG Gas Driven Air Compressor.
- 34-F..Design and Construction Class "G" "Chicago Pneumatic" Compressors.
- 34-G..Air Receivers, Aftercoolers, Reheaters, etc.
- 34-H..General Instructions for Installing and Operating "Chicago Pneumatic" Compressors.

- 34-I...Instructions for Installing and Operating N-SS and N-SB Compressors.
- 34-J...Instructions for Installing and Operating Class "O" Compressors.
- 34-K..Class N-SO Fuel Oil Driven Air Compressors.
- 34-L..General Pneumatic Engineering Information.
- 34-M..Class "O" "Chicago Pneumatic" Steam and Power Driven Air Compressors.
- 34-N..Class N-SS and N-SB Single Enclosed Air Compressors.
- 34-O..Instructions for the Installation and Care of "Chicago Pneumatic" Gasoline Driven Air Compressors.
- 34-P..Erecting and Operating Instructions for Class N-SGL Gasoline Engine Driven Compressors.
- 34-Q..Giant A-O Fuel Oil Engine Applications.
- 34-S..Small Power Driven Air Compressors.
- 34-U..Instructions for Installing and Operating Class N-SO Fuel Oil Air Compressors.
- 34-V..Instructions for Installing and Operating Giant Fuel Oil Engines.
- 34-W..Class A-O Fuel Oil Engines.
- 34-X..Class A-G Gas and Gasoline Engines.
- 34-Y..Class N-SG Gas and Gasoline Driven Air Compressors.
- 34-Z..Class N-SS Automatic Steam Driven Compressors.
- 213....Simplat Flat Disc Valves.
- 224....Compressor Booklet.
- 340....Giant Engine Circular.

ROCK DRILLS AND HAND DRILLS

- 137....Chicago Giant Rock Drills.
- 148....Chicago Valveless Hand Drills.
- 149....Chicago Portable Mine Hoist.
- 150....Chicago Coal Drills.
- 151....Chicago Slogger Rock Drills.
- 152....Chicago Gatling Drills.
- 153....Chicago Sinker.
- 154....Chicago Stoper.
- 172....Chicago Plug and Feather Drill.
- 192....Stone Tools, etc.
- 216....Hummer Hammer Drills.

GIANT MOTOR TRUCK

- 344....Catalogue.
- 328....Model 15 Specifications.
- 329....Model 16 Specifications.
- 330....Model 17 Specifications.
- 327....Little Giant Convert-a-Car.
- 337....Giant Line of Motor Trucks.

ROCKFORD AND MISCELLANEOUS

- 263....Boyer Speed Recorder.
- 266....Rockford Railway Motor Car.
- 177....Lubrication of Rockford Cars.
- 119....Operation of Rockford Cars.

CHICAGO PNEUMATIC TOOL COMPANY

1014 Fisher Bldg., CHICAGO

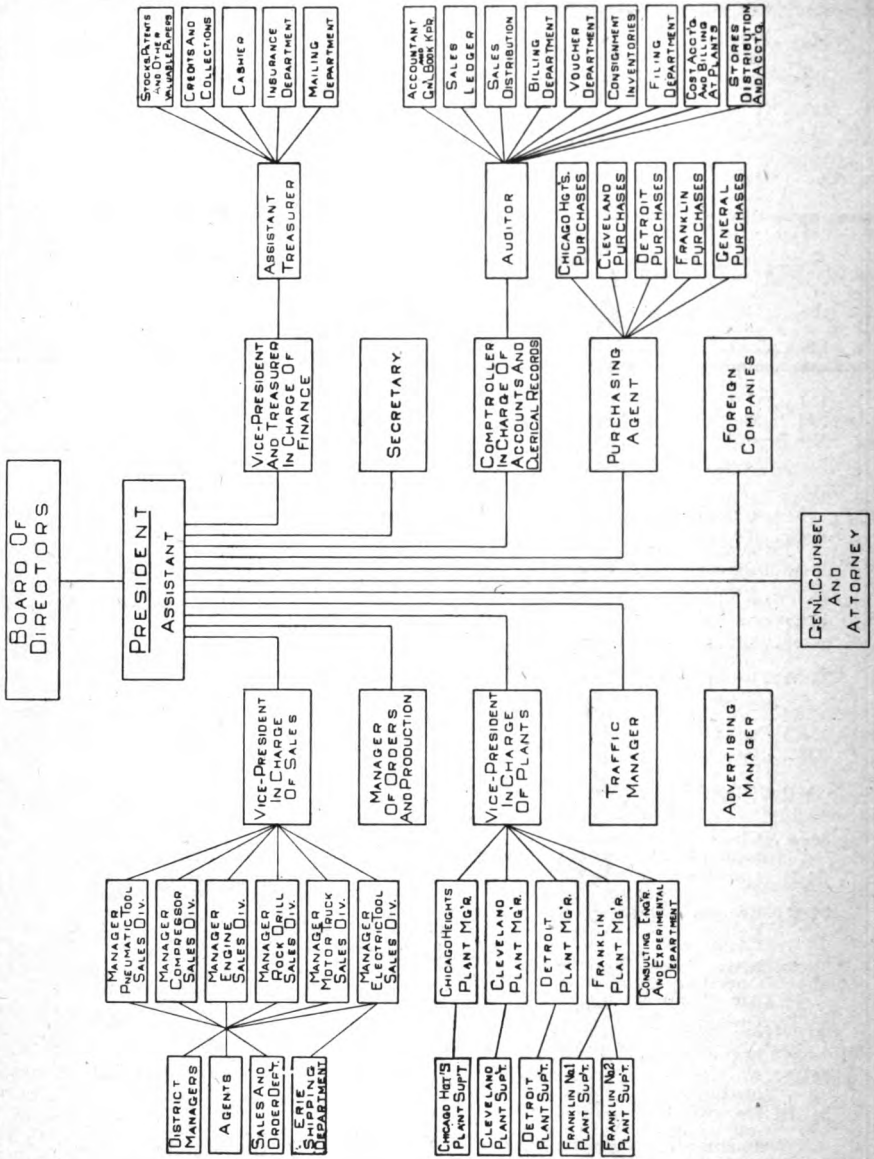
Branches Everywhere

52 Vanderbilt Ave., NEW YORK

When writing to advertisers please mention Ideal Power.

PLAN OF ORGANIZATION OF CHICAGO PNEUMATIC TOOL CO.

AUG. 20, 1918



IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances and Motor Trucks
By CHICAGO PNEUMATIC TOOL COMPANY
Fisher Building, Chicago

VOL. XII

SEPTEMBER, 1918

No. 7

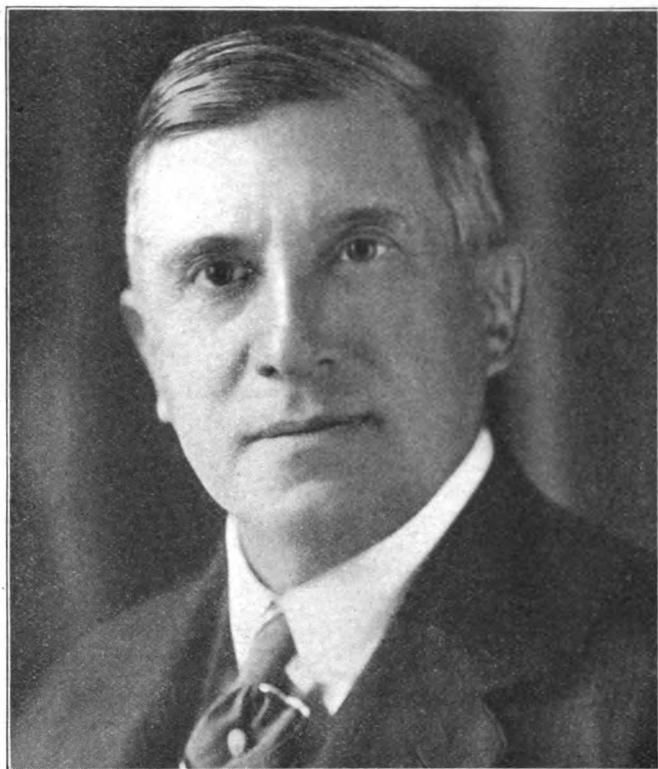
CHICAGO PNEUMATIC TOOL COMPANY REORGANIZATION

In the reorganization plans of the Chicago Pneumatic Tool Company, officials have been elected and appointments made as follows:

H. A. JACKSON—*President.*
W. P. PRESSINGER—*V. P. in charge of Sales.*
W. H. CALLAN—*V. P. in charge of Plants.*
J. L. PRICE—*V. P. and Treasurer, in charge of Finance.*
H. D. MEGARY—*Asst. to President.*
W. B. SEELIG—*Secretary.*
J. U. BLANCHET—*Comptroller.*
C. H. HAESELER—*Consulting Engineer.*
R. S. BAKER—*Auditor.*
G. A. REES—*Purchasing Agent.*
W. A. MITCHELL, 141 Broadway, New York—*General Counsel.*
KNAPP & CAMPBELL, Chicago—*General Counsel.*
J. G. OSGOOD—*Manager Pneumatic Tool Sales Division.*
C. B. COATES—*Manager Electric Tool Sales Division.*
H. L. DEAN—*Manager Compressor Sales Division.*
B. R. HAWLEY—*Manager Engine Sales Division.*
ERNEST EKLUND—*Manager Rock Drill Sales Division.*
T. J. HUDSON—*Manager Motor Truck Sales Division.*
C. I. HENRIKSON—*Advertising Manager.*
A. G. LA PIERRE—*Traffic Manager.*
L. C. SPRAGUE—*District Manager of Sales, New York.*
F. S. EGGLESTON—*District Manager of Sales, Boston.*

ROSS WATSON—*District Manager of Sales, Buffalo.*
G. A. BARDEN—*District Manager of Sales, Philadelphia.*
T. D. SLINGMAN—*District Manager of Sales, Detroit.*
A. C. ANDRESEN—*District Manager of Sales, Cleveland.*
R. F. EISSLER—*District Manager of Sales, Pittsburgh.*
T. G. SMALLWOOD—*District Manager of Sales, Cincinnati.*
C. R. TAYMAN—*District Manager of Sales, Birmingham.*
W. W. SHAW—*District Manager of Sales, Chicago.*
J. B. CORBY—*District Manager of Sales, St. Louis.*
J. N. STEBBINS—*District Manager of Sales, New Orleans.*
F. H. WALDRON—*District Manager of Sales, Minneapolis.*
B. H. TRIPP—*District Manager of Sales, San Francisco.*
C. W. CROSS—*Special Representative.*
L. E. SUMMERS—*Manager Detroit Plant.*
H. J. KIMMAN—*Manager Cleveland Plant.*
ROBERT DE SCHAUM—*Manager Chicago Heights Plant.*
E. H. CROSSEN—*Manager Franklin (Pa.) Plants.*
W. J. LAVERY—*Asst. Treasurer.*
J. O. BOWEN—*Credit Manager.*
H. S. HERIN—*Asst. Credit Manager.*
F. C. STRUBING—*Cashier.*

The plan of the new organization is shown on the opposite page.



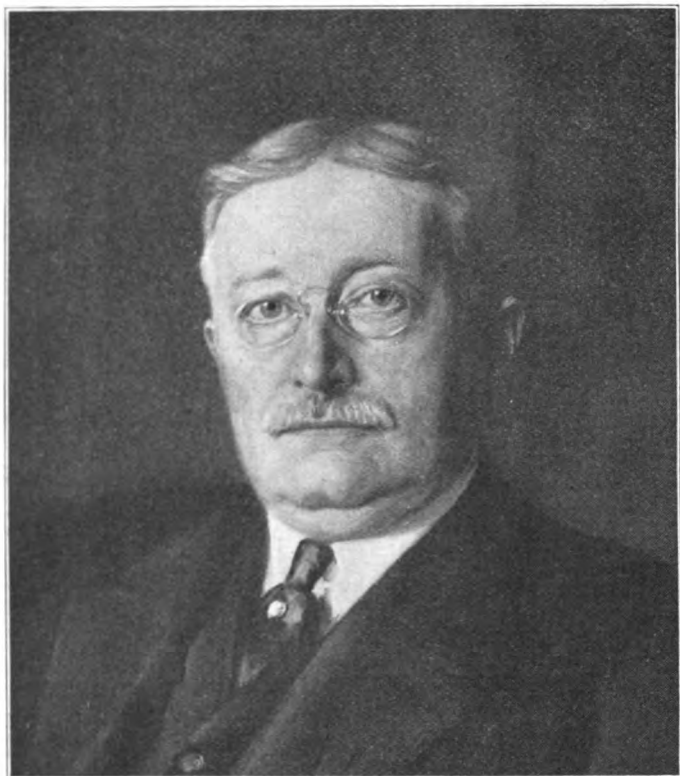
Charles M. Schwab, Director General Emergency Fleet Corporation.

Mr. Charles M. Schwab, who as Director-General of the Emergency Fleet Corporation, has perhaps the biggest job ever tackled by an executive, has always been a large stockholder in the Chicago Pneumatic Tool Company and under its new administration which is of his own selection, is taking a very active interest in its affairs.

Mr. Schwab is the master shipbuilder of today because he knows how to get results. Coupled with his great executive ability is a profound knowledge of

human psychology, and his optimism and magnetic personality are leaving their mark upon the conduct of the war and the industrial history of our times.

"If a man isn't susceptible to praise," says Mr. Schwab, "there is not much hope for him. Deny credit to the man who makes good and he will feel there is not much use in making good. My idea is to place the responsibility upon the man who is to do the job, then encourage him, and finally give him full credit when he does make good."



John R. McGinley, Chairman of the Board, Chicago Pneumatic Tool Co.

Mr. John R. McGinley, who is Chairman of the Board of Directors of the Chicago Pneumatic Tool Company, is so well known that an extended introduction is not necessary. He has been an official in the Westinghouse Company for over twenty-five years. He is Chairman of the Board of Directors of the Pittsburgh Screw & Bolt Company, and

in the same capacity he also directs the affairs of the Gary Screw & Bolt Company. He is President of the Duff Manufacturing Company of Pittsburgh. Mr. McGinley is a director in a number of banks and industrial concerns. Among the latter are the Pool Engineering Company and the Westinghouse Air Brake Company.



H. A. Jackson, President, Chicago Pneumatic Tool Co.

Mr. H. A. Jackson, newly elected president of the Chicago Pneumatic Tool Co., was born in Bethlehem, Connecticut, July 7th, 1881. He is a graduate of the Lawrence Scientific School of Harvard University, Class of 1903, but devoted an additional year to a special course in metallurgical work in the Graduate School there.

He entered the employ of the Bethlehem Steel Company in July, 1904, where he served an apprenticeship in the various departments of the works, thus gaining valuable practical experience and an intimate acquaintance with the steel business by personal contact with the production end. He later entered the sales department of the Bethlehem organization. From that time his advancement was steady and constant.

A number of years ago Mr. Jackson was sent to Boston to open the Beth-

lehem Steel Company's office there and to organize their sales and executive forces in that territory. How well these duties were performed was best proved by the fact that the Boston Office ranks among the best in the company's organization.

During his early career in the sales end of the Bethlehem Company he was sales agent in Chicago for some months.

Mr. Jackson comes to the Chicago Pneumatic Tool Company with a ripe experience in the steel business and an intimate acquaintance in fields of endeavor closely related to those of his new affiliation. His entire experience was built upon the broad and firm foundation of a fundamental university education, supplemented by practical experience at the furnace and forge, in shops and in sales.



W. P. Pressinger, Vice-President in Charge of Sales,
Chicago Pneumatic Tool Co.

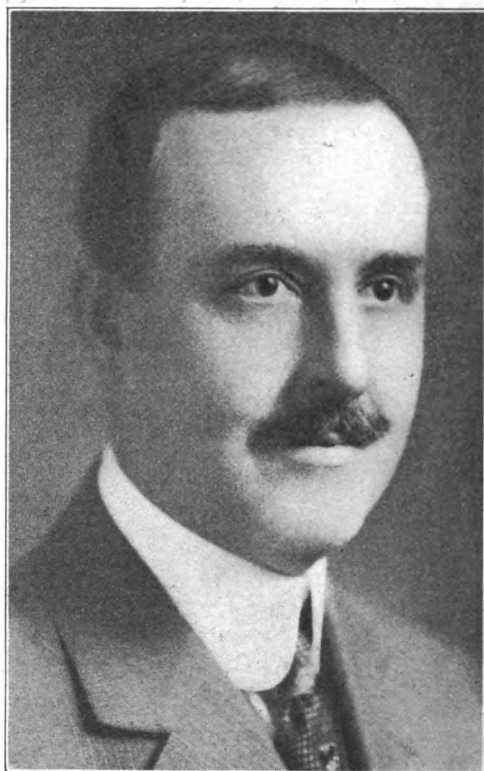
Mr. W. P. Pressinger, Vice-President, in charge of sales, was born in New York City, and as a young man entered the employ of the former Clayton Air Compressor Works of New York, remaining with that company for thirteen years, with the position of Manager of Sales during the latter years.

In 1900 Mr. Pressinger organized the New York Air Compressor Company, of which he became General Manager. Soon thereafter Mr. Pressinger took part in the organization of the Franklin Air Compressor Company of Franklin, Pennsylvania, the interests of the New York and Franklin Companies being merged.

Later, upon the formation of the present Chicago Pneumatic Tool Company,

the New York and Franklin Air Compressor Companies became a part of that organization, and Mr. Pressinger assumed the duties of General Manager of the Compressor Department, with headquarters at New York. In 1915 he removed his headquarters to the general offices of the Company in Chicago, upon the expansion of his department to include the rapidly growing internal combustion engine business of the Company.

Upon his recent election to his present position as Vice-President, he took over the management of the entire sales of the Chicago Pneumatic Tool Company in all divisions. Mr. Pressinger is a member of the American Society of Mechanical Engineers and the Sons of the Revolution. He is also President of the Compressed Air Society.



W. H. Callan, Vice-President in Charge of
Plants, Chicago Pneumatic Tool Co.

W. H. Callan, Vice-President in charge of Plants, was born in Lockport, New York, December 17, 1872. He received his early education and technical training in that locality, after which he made a rather extensive tour of the middle and western states, familiarizing himself with the best production methods employed by some of the leading concerns in this country, and in 1901 connected with the Franklin Air Compressor Company. Soon after, this company was taken over by the Chicago Pneumatic Tool Company, and Mr. Callan made shop superin-

tendent, in which position he remained until 1910. He then resigned to accept a more lucrative position in the same capacity with the Venango Manufacturing Company of Franklin, remaining in this position until 1913, when he resigned to become General Manager of the Franklin Plant of the Chicago Pneumatic Tool Company, in which position he remained until June 1st, when he was placed in charge of plants of this company with headquarters at Chicago. Following his removal to Chicago he was made Vice-President in charge of plants.



Jacob L. Price, Vice-President and Treasurer,
Chicago Pneumatic Tool Co.

Jacob L. Price, Vice-President and Treasurer in charge of finances of the Chicago Pneumatic Tool Company, was born in Springfield, Illinois, and attended the public schools in that city. He was just completing a legal education when he was offered a position in a bank where he spent four years, obtaining thereby perhaps the best education which a young mind with a leaning toward financial matters could have received.

Mr. Price was for many years con-

nected with Armour & Company in various executive and financial capacities. He was for about five years President of the Stock Yards National Bank of Fort Worth, Texas, which is also an Armour interest. Later he was associated with the Atlantic National Bank of New York City.

Mr. Price is in charge of financial affairs of the company and brings to it a wide acquaintance in banking and industrial circles.



H. D. Megary, Assistant to President,
Chicago Pneumatic Tool Co.

H. D. Megary, Assistant to President of the Chicago Pneumatic Tool Company, was born in Philadelphia, Pennsylvania, April 21, 1888.

After preparing at the Penn Charter School in Philadelphia, he entered the University of Pennsylvania, where he pursued the Commercial and Financial Course of the Wharton School.

Upon completion of this course in 1909, he entered the employ of the Bethlehem Steel Company, with which company he has remained until this time.

While at Bethlehem, Mr. Megary became familiar with the steel business in general through work which identified him with the various important departments of the operating end of the business, and later with the cost, production, executive and sales.

He therefore comes to the Chicago Pneumatic Tool Company with an experience and training which admirably fit him for the very important duties he assumes.

What Makes Up An Airplane.

The following list of materials for an airplane of simple type, exclusive of engine, has been tabulated by the Signal Corps, says the Timberman:

Nails	4,326
Screws	3,377
Steel stampings	921
Forgings	798
Turnbuckles	276

Veneer, square feet	57
Wire, feet	3,262
Varnish, gallons	11
Dope, gallons	59
Aluminum, pounds	65
Rubber, feet	34
Linen, square yards	201
Spruce, feet	244
Pine, feet	58
Hickory, feet	1??
Ash, feet	31



J. U. Blanchet, Comptroller, Chicago
Pneumatic Tool Co.

J. U. Blanchet, Comptroller of the Chicago Pneumatic Tool Company, was born February 14, 1879, at Lotbiniere, Province of Quebec.

He was educated at the Commercial Academy of Montreal, Canada. After graduating from the Academy, he entered the employ of the Canadian Pacific Railway, in the Accounting Department, and remained with the Railway for seven years.

Subsequently, Mr. Blanchet entered the employ of the Metropolitan Street Rail-

way of New York, with whom he remained for a period of one year. He then became associated with Price, Waterhouse & Company, Chartered Accountants, in whose service he was employed for a period of ten years, and became the manager of their New York Division.

Mr. Blanchet's experience and training are such as to render him exceptionally well qualified to assume the various important duties devolving upon him in the capacity of Comptroller.

Another English Massacre.

From a New York paper: "Emily was a queer girl, and so, for that matter, was her father."

A Western bank announces: "We make the interest of our depositors our interest."

Newspaper on deceased financier:

"He is reputed to have made six million dollars in as many years."

Card of cleaning company: "Don't take the life out of your rugs by beating them. Let us do it in a more sanitary way."

Placard of a moving picture show: "Young children must have parents."

WINNING THE WAR WITH RIVETING GUNS

At Sparrow's Point recently, Charles Knight, colored, accomplished a feat which through the publicity it was given thrilled the shipbuilding industry all over the world and earned the commendation of Uncle Sam and his allies in our war against the Hun. Knight drove 4,875 three-fourth inch rivets, two and five-eighths inches long in nine hours, using two No. 90 Boyer Hammers alternately, at the plant of the Bethlehem Shipbuilding Company.

It is said that a modern steel ship requires from one-half million to a million rivets, and since the building speed of steel ships is largely dependable upon the rapidity with which rivets can be driven, Knight's feat was far reaching, and every riveter working on ships has striven to better or at least equal Charley Knight's record.

Quoting from the Baltimore American which described the event:

"Charles Knight, colored, living on Wolfe street, is the employe to break the record. He drove 4,875 three-fourth-inch snap rivets two and five-eighth inches long in nine hours. The previous world's record was held in Scotland, the total being 4,422, while the Maryland record was 2,720 by a riveter of Baltimore. This country's high mark was 3,085, held by another employe of Mr. Schwab at the Harlan and Hollingsworth plant at Wilmington, Del. The count made yesterday is official as it was witnessed by W. Tinsley, chief inspector United States Shipping Board, Joseph O'Keefe, Inspector for the same board; H. Mitchell, inspector, American Bureau of Shipping, and John Sheriff, inspector of Lloyd's Bureau of Shipping.

"At 4 o'clock, and with one hour to

go before quitting time, Knight had equalled the record set in Scotland.

"He kept two holders-on, three passer boys and two heater boys busy, and still he found time to get a breathing spell. He used two No. 90 Boyer Pneumatic hammers, alternating as soon as one became too hot for handling. He only rested one-half hour, and this was his usual lunch time. His average for the day was 541 2-3 rivets per hour, a shade over nine rivets per minute for the entire day. At noon he had driven 2,637 rivets, and in the afternoon he drove 2,238.

"Knight started to work at the usual time yesterday morning with the avowed intention of being the champion rivet driver of the world, and he rejoiced in thinking that in doing so he was doing his bit in helping to lick the Kaiser.

"At 5 o'clock he stopped work. Whistles blew and foremen and employes alike cheered him. Then he remarked: 'Oh, I will do better next time. This is the first time I tried to break records.'

"Statistics show that one rivet equals seven shots fired at the enemy. That being the case Knight fired 34,125 bullets yesterday. Those sharing in the honors were: Harry Holcomb and John Stewart, holders-on; George White and Clarence Bagley, heater boys and William Jones, Roosevelt Robertson and Joseph White, passer boys.

"Aside from any bonus Knight may receive for breaking the world's record he will receive \$102.36 for his day's work."

Recognizing the importance of riveting as an aid in winning the war, Donald MacLeod, London, a large ship owner, put up a prize of \$25.00 a week for four weeks to anyone driving the greatest number of rivets (size not mentioned), in a ship's side in a nine hour day, pro-



President Wilson Driving the First Rivet in the First Ship Built in the Shipyards of Alexandria, Va., in Many Years.
(Courtesy of International Film Service, Inc.)

viding the number of rivets driven exceeded the record of the Clyde riveter, Daniel Deviney, namely 4,422, and that of any subsequent allied international record in a shipyard. This prize was open to any British, American or Japanese riveter. Knight captured this prize.

While Knight's record is amazing, many other riveting gangs have made splendid records, since Uncle Sam started his "win the war" shipbuilding program.

In comparing these records one must

not be guided by the numerical count alone. There is a difference in rivets, in their sizes and styles of heads. There is variation in the amount of assistance given the riveter in performing his work. There is a difference between rivets driven horizontally and downward or upward, so that while one riveter may drive again as many as another the credit for rapid and efficient work may be equal when all conditions are considered.

Charles Schock drove 2,720 rivets in nine hours, at the Baltimore Drydock



The Prince of Wales Operating a Boyer Riveting Hammer. Britain Is Speeding Up Her Shipbuilding on the Clyde.
(Courtesy of Topical Press Agency, London.)

and Shipbuilding plant, Baltimore. These were three-fourths-inch button head rivets and were driven with a No. 60 Boyer Riveting gun.

At the plant of the Buffalo Drydock Company, Jno. Frazer drove 1,624 flush shell seven-eighth-inch rivets in eight hours and fifty-three minutes, using a No. 60 Boyer. This record was beaten a few days later by J. Starke who drove 2,098 flush shell seven-eighth-inch rivets in eight and three-quarters hours, using a No. 60 Boyer Riveter.

At the Quincy, Mass., plant of the Bethlehem Shipbuilding Co., Charles Mulham drove 2,805 three-quarter-inch oil-tight rivets in nine hours, using a No. 60 Boyer Riveter.

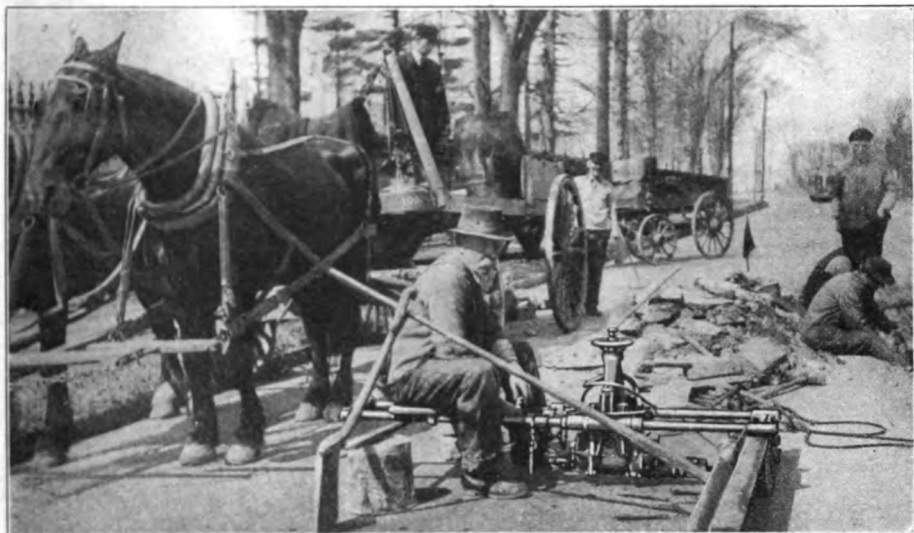
Tom Horn of the Moore Shipbuilding Company, Oakland, Calif., drove 5,620 rivets in nine hours. Of these 4,429 were seven-eighth-inch counter sunk and 1,191 were seven-eighths-inch snap. At the end of the day Horn was still fresh and said he felt sure with the experience he had gained in the day's work he would soon be able to materially beat his own

record, which he did a few days later—6,075 rivets in eight hours. It has not been unusual for Horn to drive between 2,500 and 3,000 rivets in an ordinary day. Horn's crew when establishing the record consisted of holder-on Salva and heater Causse and passer Estee.

On June 13th a new world record for bottom shell rivets was claimed for Martin C. Hahn who drove 1,875 rivets in seven hours and fifty minutes. He received \$33.00 for the day's work.

J. J. Briggs, riveter employed at the Atlantic Works, Summit Street, Brooklyn, N. Y., is said to have driven 7,864 seven-eighth-inch rivets in seven and one-half hours. The work was done on a Dutch ship undergoing repairs in Staten Island waters.

Driving 12,209 rivets in nine hours into a standard ship was the feat reported at the yards of Workman & Clark, Belfast, Eng., recently by John Omir, who beat the hour record for the United Kingdom. Omir is reported to have driven more than a thousand rivets every hour and on two occasions passed



A Little Giant Electric Track Drill at Work on Mt. Auburn St., Cambridge, Mass., Boston Elevated Railway Co. It is Shown in Use on a Detached Rail, a Duty Which Track Drills Are Frequently Called Upon to Perform. Little Giant Electric Track Drills Are Fully Described in Bulletin E-52.

the 1,400 mark. In his best minute he drove twenty-six rivets. Omir used about two and one-half tons of metal.

The immediate result of the tremendous patriotic efforts of riveters in all shipyards, is already apparent in American shipbuilding activities. Until this year, if a steel ship was launched in ninety days it aroused comment from coast to coast. On April 20th, an 8,800 ton steel freighter was launched in Seattle at the Skinner & Eddy Company yards, fifty-five days after her keel was laid! A few days later a 5,500 ton steel ship was put in the water in the Camden yards of the American Shipbuilding Co., twenty-seven days after construction was started!

Uncle Sam has awakened. He recognizes his present job is to win the war and is preparing to achieve this result by using with tremendous effort all the latent talent he possesses.

[Editor's Note: Should we inadvertently have overlooked or misstated any pneumatic riveting records, it will be

our pleasure to make corrections or amends in our next issue. In submitting records for publication, please give size and style of rivets, in what part of ship driven, size of riveting gun and names of members of riveting gang. See prize offer made by the Chicago Pneumatic Tool Company on page 186.]

Nearly Perfect.

A Scottish farmer of a miserly disposition bought a horse at a fair. On the way home he thought a drink of water would refresh it, so he got a pail of water; but the animal would not take it. When he got home, he offered it a feed of corn; but to his surprise it would not touch that, either.

"Weel," he muttered to himself, "if only I was sure ye were a guid worker, ye're the verra horse for me."

Misunderstood.

Proprietor—Do you drink?

Applicant for Job—Thank you, sir. I'll have a small one.

—Judge.

IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air
and Electrical Appliances

BY THE

CHICAGO PNEUMATIC TOOL CO.

1014 FISHER BUILDING

CHICAGO, U. S. A.

C. I. HENRIKSON Editor

VOL. XII SEPTEMBER, 1913 No. 7

TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year
Other Countries in Postal Union, 50 cents per year

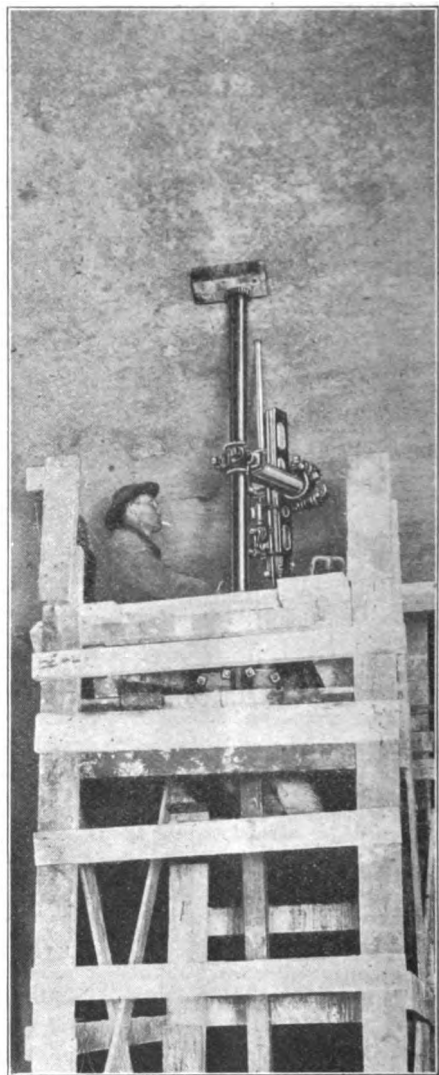
Send 25 cents and have your name put on our
subscription list

PRIZE OFFER TO SHIPBUILDING RIVETERS.

The Chicago Pneumatic Tool Company offers a prize of One Hundred Dollars for each new individual record established either in this country or abroad for shipyard riveting on hulls only. The test period is to consist of two hundred consecutive working hours. Boyer Hammers must be used and superintendents must certify as to accuracy of records. The purpose of the offer is to assist the Government in its policy of intensive ship production, while promoting friendly rivalry among riveters and demonstrating the unequalled merits of the Boyer Riveting Hammer. Public announcement will be made of the winners.

An Unusual Application of the Hummer Drill.

In the construction of the Dorchester Tunnel, between Broadway Station and Andrew Square, the Boston Elevated Railway Co. found the Hummer Hammer Drill very effective for drilling 6-in. by 5/8-in. holes in the concrete roof of the tunnel. The holes are necessary for anchoring the trolley wire blocks. They must be drilled in sets of four and as there is no give in the trolley blocks,



which are of maple wood, the holes must be drilled to gauge.

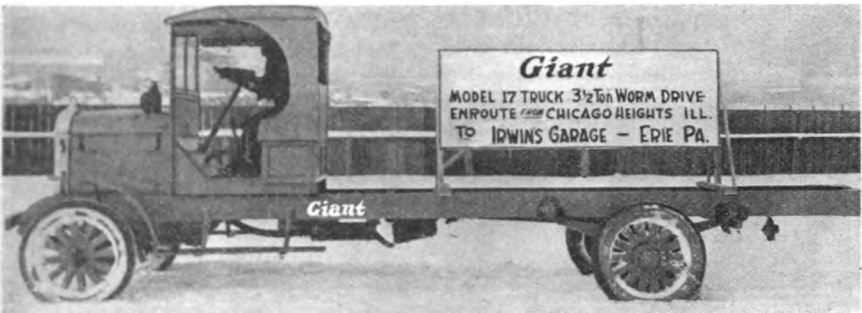
The operator was able to easily drill a hole in three or four minutes. Some difficulty was experienced by striking iron reinforcement rods which were embedded about 2½ inches deep in the roof of the tunnel and which were struck frequently. However, it was easy to shift the machine by just undoing the two bolts on slide arm and moving 1 inch away from the old hole.

The Transportation of Motor Trucks

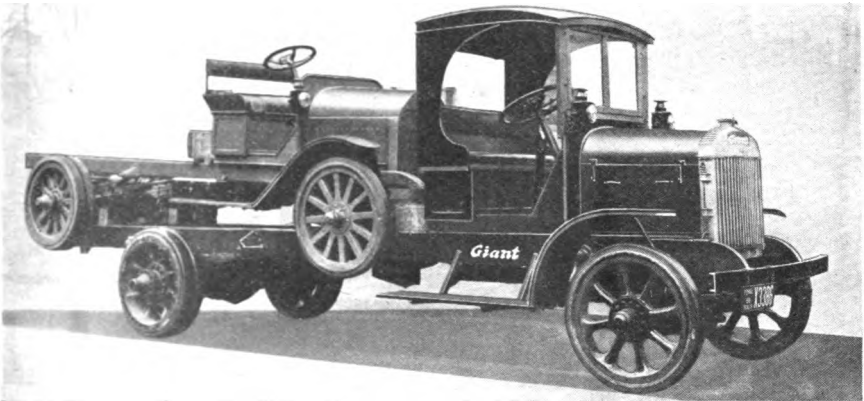
A Study in Evolution



The approved method of shipping Giant Trucks before war conditions tied up the railroads.



Meeting the congested Railroad Situation. A Giant Truck leaving the factory under its own power. Deep snow no obstacle.



No power wasted. A 3 1/2-ton Giant Truck enroute with a 2-ton Giant on its back. The last word in Motor Truck transportation.

LUBRICATION OF AIR COMPRESSORS

By W. H. CALLAN, Vice-President in Charge of Plants
Chicago Pneumatic Tool Co.

The lubrication of the compressor, steam cylinder, main bearings, crankpin, crosshead pin, crosshead guide, etc., does not differ from that of the ordinary steam engine, which is very well known and understood; hence the discussion in this article will be confined to the air cylinder lubrication only.

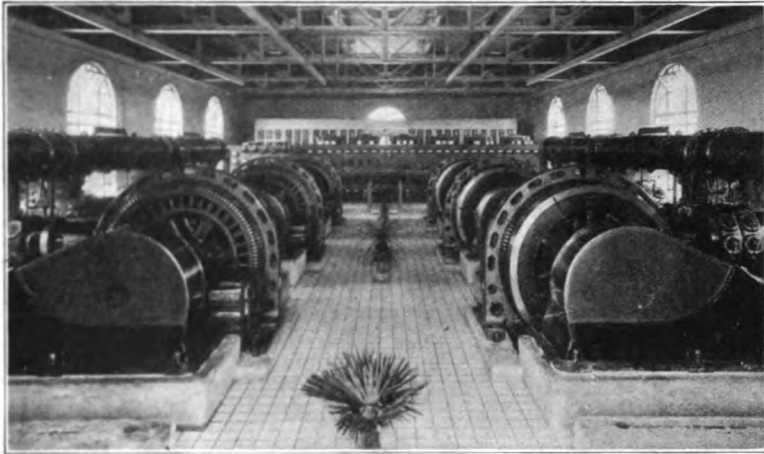
A number of years ago when we were young in the compressor business, considerable trouble was experienced in procuring a suitable oil for lubricating the air cylinders of our compressors. After considering the matter for some time, it was decided that an expert on the subject should be consulted. Following this decision, the matter was taken up with a well known oil company whose representative called upon us and, after making a careful examination of the conditions, reported that our trouble was entirely due to using an oil of too light body and too low viscosity to withstand the high heat of the compression. He stated that the oil we were using was gasified, due to the high temperature of the air, and that it passed off in vapor, leaving the cylinder wall without lubrication. The expert thereupon recommended an oil which he considered suitable for our use. The particular grade happened to be of 26 Beaume gravity with a flash point of 515 degree F., fire test of 555 degrees F., and a viscosity of 130 S at 212 degrees F.

After using this oil for some time we found no improvement in the operation of the machine, in fact it appeared to be laboring and the temperature of the discharge air was very high. After several days of operation with this new oil, the cylinder heads were removed, the valves taken out, and a careful examination made. The cylinder wall seemed to have a sticky, plastic coating; the air passages and discharge cavity of the cylinder

showed signs of dark deposits, while the face of the valve seats were covered with a black hard coating. This hard formation on one side of the valve seat caused the valves to leak, hence the increased temperature of the discharge air. The sticky coating on the wall of the cylinder was responsible for the increased friction. The representative's attention was called to this condition, whereupon he suggested that a little lighter oil be used, and this time he recommended one with 27½ Beaume gravity, flash point 450 degrees F., burning point 500 degrees F., and a viscosity of about 125 S at 212 degrees F. We asked him if he did not think this was a little too heavy a grade for air cylinder lubrication. He assured us it was not and stated that, in order to withstand the high temperature of the compressed air, it was necessary to have a rather low gravity and high viscosity oil, with a flash point above the temperature of the air.

After we had used this grade of oil for some weeks, a further examination was made; and while the cylinder wall appeared considerably better, the valve passages and discharge cavities of the cylinder were badly coated with a hard deposit. When this matter was again brought to the attention of the expert, he suggested that we reduce the amount fed into the cylinder. This was done with great care until we were only using three (3) drops a minute in a 14x14 cylinder running at 150 R. P. M., but even under this condition the deposits in the valve passages and the discharge cavities of the cylinder continued to form as long as we used this oil.

The expert happened to come our way several months after, whereupon I called his attention to the condition experienced with his oil. In regard to the amount



An Ideal Compressed Air Installation.

Six "Chicago Pneumatic" Class O-CE Air Compressors, size 26-15x18, displacement capacity each 2212 cu. ft. per minute installed by the Union Iron Works, Alameda, Cal. They are driven by 390 H. P. General Electric type A. T. I. synchronous motors, wired for 3 phase, 60 cycle, 440 volts.

First order covered two. This plant was soon extended to embrace the ma-

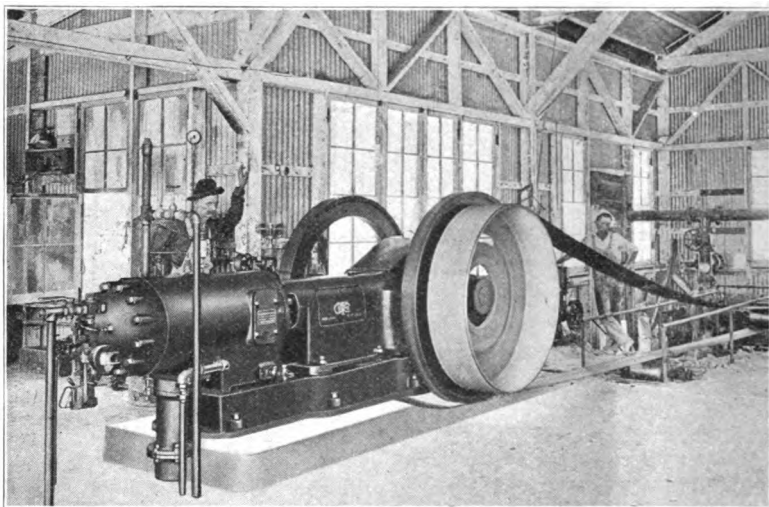
chines shown and space provided for two more now being erected, the Government shipbuilding program necessitating the maximum productive capacity of this yard.

Sixteen additional units have been ordered and are now being rushed to completion at our works. This endorsement of the superior qualities of our compressors may be safely accepted by those contemplating the use of compressed air.

we were feeding into this cylinder, he said this was reduced to a point that he thought was the minimum. His reason given for the formation in the passages was that the residuum of all oils is carbon, and that it, therefore, was no doubt due to carbon deposits. At the same time he assured us that the oil he had recommended was the best procurable for the purpose, and that we should go ahead and use it without any fear of trouble, which we continued to do. However, the formation in the discharge passages seemed to be building up very rapidly despite the fact that we were feeding but a very small quantity of oil into the cylinder. These formations had collected to such an extent that it was necessary to clean the passages in order to avoid the hazard of an explosion. The passages were, therefore, cleaned, and some

of this removed material was analyzed and found to contain about 1.5% free oil, 11% rust, 5% decomposed oil, 30% mineral ash, 10% coal dust, and the remainder foreign matter or residuum. A further investigation revealed the fact that our intake was exposed to such material as coal dust, mineral ash, shavings, water, etc., as well as some air.

After cleaning the compressor, and safeguarding the intake against dirt and dust, we procured another grade of oil which, in our own judgment, was more suitable for the work, since, in the meantime, we had made investigations and studied the question to some extent. This time we procured an oil of 31 Beaume gravity, flash point 375 degrees F., burning point 420 degrees F. and with a viscosity of 200 S at 100 degrees F. We started by feeding three drops a



City Dependent Upon Giant Oil Engine.

"Giant A-O Semi-Diesel Fuel Oil Engine driving a 1000 gallon per minute two stage centrifugal pump, pumping against a 125 ft. head into a tank.

The City of Imperial is located in the heart of the famous Imperial Valley about 100 ft. below sea level and its population is approximately 2500. Their main industry is farming, its principal products being cotton, cantelopes and alfalfa. The temperature in the summer

time is anywhere from 100 degrees in the shade up. This plant is the only source of water supply for the city, consequently they were compelled to secure an engine that would prove absolutely reliable and chose the Giant Semi-Diesel Fuel Oil Engine.

It is their intention later on to install another 14x14 A-O Engine to drive a generator to furnish lights for street lighting and other purposes and the space is already provided."

minute. Finding the cylinder copiously oiled, we reduced the feed to two drops a minute. The compressor was operated in this condition for a considerable length of time with practically no trouble from carbon deposits.

Experiencing such good results from this light oil and by this time disbelieving so much the virtue claimed for low gravity, high flash point and heavy viscosity, we were prompted to try another grade of oil, selecting this time one having a gravity of 33 Beaume, flash point of 380 degrees F., fire test of 420 degrees F., with a viscosity of 140 S at 100 degrees F. We used the same quantity as before, namely, two drops a minute in a 14x14 cylinder running 150 R. P. M. This oil was used for years without any

trouble from a point of lubrication, valve leakage and carbon deposits.

The oil representative made his regular calls on us and each time we told him what we were doing, but he assured us we were on the wrong track and that sooner or later would get into trouble. But after continued tests and very careful observation of all conditions, we are satisfied that the latter oil is the most suitable for air cylinder lubrication when working against 100 lbs. pressure, either Single or Two Stage.

One day an old friend of mine called, who also happened to be an expert representing one of the leading oil companies. I related to him my experience with air cylinder lubrication, and, somewhat to my surprise, he too assured me

that we were using the wrong oil and said, "You know you get not less than 400 degrees F. in your air cylinder when working against 100-lb. single stage." With this I agreed, I then asked him how he knew we were wrong, and what means he employed for ascertaining the proper grade of oil for air cylinder lubrication. He then proceeded to explain to us the method their engineers use in determining the proper oil for different kinds of service. He said, "Since you have agreed that the temperature of the air is 400 degrees, our test would be conducted as follows:—Take a block of cast iron 6-in. or 8 in. square and 2-in. thick, place this block in a layer of sand in a shallow iron pan, pack the sand closely around the cast iron block, then put a gas burner under the pan and turn on the heat slowly. The top surface of this block is polished and has a drilled hole, and into the hole a thermometer is inserted. Heavy steam cylinder oil is poured into the hole around the thermometer bulb so as to make a close heat contact. When the thermometer rises to 400 degrees, lower your gas burner until the thermometer remains steady at 400 degrees. Then take your different samples, dip the point of a lead pencil into the oil, hold the pencil 2 in. from the surface of this iron block and allow a drop to fall on the hot polished surface."

"When such a test is made with the grade of oil from which you say you are getting successful results, we find the drop spread out to about 1 1-8 in. in diameter, smokes a little, dries up, and is evaporated in ten seconds time, leaving the surface perfectly dry. With a higher grade of oil having a flash point of 450 degrees F. and heavy viscosity, when the drop falls on the surface of this polished block, it spreads out to about 1 1/4-in. in diameter, smokes a little, but after five minutes, the surface is still oily. Thus we have proof that this is the proper oil to withstand such service as you get in your air compressor cylinder."

Then I asked him what he thought the temperature of the surface of the

cylinder wall was when the air in the cylinder is 400 degrees F. He hesitated a little, then he said he believed it would be about 25 degrees F. less than the temperature of the air. I disagreed with him here, saying this did not seem right, as the water-jacketed wall should be much cooler than the air. After some discussion we went into the office and consulted some authorities on the subject; we found some tests had been made abroad on the temperature of the cylinder walls in an internal combustion engine, where, with an explosion temperature of 2700 degrees F. and an average temperature through the cycle of 950 degrees F., and the water in the jacket at 200 degrees F., the inside surface of the cylinder wall did not go above 267 degrees F. When my friend was shown these figures he was nearly speechless and admitted that he had never thought that the temperature of the wall of an internal combustion engine cylinder, with an explosion temperature so high, could remain as cool as this authority stated. However, since the character of the authority was such that it could not be disputed, it was accepted by the oil expert without question. I then asked what he thought the temperature of the air cylinder wall should be when the air does not exceed 400 degrees F. In answer he said he did not know, but did not believe it would be very much above the temperature of the water in the jacket.

As a matter of fact, the temperature of the inside of the cylinder wall of a water-jacketed cylinder is not more than 30 degrees F. higher than the temperature of the jacket water, as long as the water does not boil; and, since this is the true condition, what is the use in using oils of low gravity, high fire test, and high viscosity to meet a condition such as this one now appears to be? The temperature of the inside surface of the cylinder wall on an air compressor is very little, if any, above the temperature of the surface in the main bearing of the ordinary Corliss Engine.

From this it appears that the ordinary

oil expert who lays such stress on high viscosity and high flash point, has not considered the true conditions. We have further shown in this article that the cause of carbon deposits in the passages of an air cylinder is not always entirely chargeable to the residuum of oil, but in many instances is due to using an oil of too heavy a body, which adheres to the passages of the cylinder; and, furthermore, when the inlet is not properly protected from foreign matter, all such material as coal dust, mineral ash, shavings, waste, etc., are drawn into the cylinder and deposited on the sticky surfaces coated with this heavy oil. This foreign matter, with additional oil, gradually builds up until the passages become choked; the air valves begin to leak for some reason, thus increasing the temperature, until finally it some times reaches a point as high as 500 degrees F. when compressing to 100-lb. single stage. If there are many shavings or very much coal dust deposited in the passages, it is apt to char and become incandescent. When it does, the temperature of the air rises very rapidly, and as a consequence, the pressure increases quickly to a point beyond the strength of the receiver, and results in what is generally called an explosion.

It is the writer's opinion that no violent explosion ever takes place in the ordinary air compressor, unless kerosene, gasoline, or some such material is introduced into the compression space.

In our personal experience some years ago with a two-stage compressor where the intake had been neglected and also the wrong grade and quantity of oil had been used, the high pressure discharge valves became leaky, thus allowing the air to churn in and out of the cylinder at each stroke, heating it until it became so hot that the heavy deposits in the passages actually took fire; the whole system burned out, like a chimney of an old time wood stove. Very fortunately, however, for us, there was no explosion because the safety valve on the receiver relieved the sudden pressure caused by the burning material in the discharge

passages and the compressor was promptly shut down.

From the foregoing it will be understood that in the selection of an oil for air cylinder lubrication, nothing should be used but a pure mineral product having a gravity of from 31 to 33 Beaume, a flash point of 375 to 390 degrees F. and a viscosity of 140 to 150 S. at 100 degrees F. Under no circumstances should a heavy grade be used, despite whatever claims may be made by the oil salesmen as to the virtue of heavy viscosities or high flash points. It should also be borne in mind that when the surface of the cylinder wall is once glazed over, very little oil is required to properly and adequately lubricate the working surfaces.

The film of oil on the cylinder wall is understood to be less than .00025 in. in thickness, and since in the operation of compressing air, there is practically no moisture, the piston rides back and forth on this film and requires very little oil to be added in order to maintain the quantity required. Should a greater amount of oil be used than just enough to keep up the required film, it will be plowed up ahead of the piston and be forced through the valves and into the cylinder cavities, where it will collect in the low places and solidify by reason of being mixed with foreign matter taken in through the inlet, forming deposits commonly called carbon.

As has been shown, a 14x14 cylinder can be adequately lubricated with two drops of oil a minute when the compressor is operated at 150 R.P.M., being the equivalent of one drop of oil for each 800 square feet of cylinder surface swept by the piston. The oil herein referred to happened to be of paraffine base. However, we believe that an oil of about the same consistency, refined from an asphalt base, would serve as well, if not better.

Zero in Occupations.

Being head janitor in a girl graduate's air castle.



WAR WORKERS AND WAR SAVERS.

By Clarence L. Speed.

(Director of Publicity, War Savings Committee of Illinois.)

The National War Savings campaign entered the final quarter of the year with only half of the \$2,000,000,000 worth of War Savings Stamps issued for 1918 sold. The people of the Nation are called upon to make an earnest effort to invest as much money in War Savings Stamps during the last three months of the year as they did in the first nine—this despite the fact that the largest Liberty Loan drive ever made by the Government is to come in this period.

The theory of the War Savings Stamps is that it is not a competition of the Liberty Loan. All patriotic Americans are supposed to invest all the money they can spare from their accumulated savings and from the margin between income and ordinary living expenses in the Liberty Loan, then they are supposed to go further and invest in War Savings Stamps.

The money invested in War Savings Stamps should represent real self-denial. Every contemplated purchase of any article for individual use should be carefully thought over. The question each purchaser should ask himself is not "Do I need this" but "Can I do without it?" If he asks himself this question honestly and sincerely he will be amazed to find how many things he can do without. The money thus saved should be immediately invested in War Savings Stamps.

Thus, and thus only, will the Government receive the aid from every individual that it has a right to count upon in war time. It not only will get the money necessary to purchase materials and supplies for carrying on the war, but it will

be relieved from the competition for these same materials, supplies and labor, which it now meets from private business. If our soldiers in France willingly offer even their lives for the winning of the war, we, who remain at home, should be able to deny ourselves a great many of the things we once thought necessary.

Organized saving is much more effective than individual saving. For this reason every factory, every office, every place where men and women earn their living, should be organized into a War Savings Society.

Here is a real opportunity for any individual, who has felt that he or she has not been doing everything possible to aid the Government in these war times, to perform a real service.

All he or she has to do is to organize the workers in his or her own department into war savers. It is a grand opportunity for volunteer service. There is no red tape about it. There need be no correspondence, unless it is desired, with any War Savings Committee. All the patriotic individual need do is to canvass his or her fellow-workers, get them to agree to purchase each pay day a certain number of War Savings or Thrift Stamps and then take the trouble to see that they fulfill their pledges.

If workers will pledge themselves to buy regularly after having fulfilled their other Government obligations, the necessary savings in material and labor will follow as a matter of course. They cannot spend for luxury or things which they can do without the money which they have paid in War Savings Stamps.

It is not necessary to dwell at length upon the advantages of War Savings Stamps as a matter of investment. It may be well to repeat, however, that workers who make this investment are not giving their money but are lending it at a good rate of interest. War Savings Stamps can always be cashed at full cost price plus interest. They cannot decline below par because the Government stands ready to redeem them at any time in case the holder finds it necessary to have his money.

In the last analysis, savings from incomes must be made by those who earned the incomes. Those who save the most now will not only be doing the most for their Government, but they will be in the best position to meet possible adversity in the days after the war has been won and the unsettled period of reconstruction has arrived.

Mistakes.

Mistakes do not "happen"—they are made, and their manufacture is an extremely unprofitable business. A sideline always found connected with it is the making of excuses. There is no market for either product.

If you run an excuse factory, sell it out and take up a business that pays. One-half the gray matter wasted on the excuse would prevent the error every time.

Don't doctor symptoms. Get after the cause of your mistakes.

Do you suffer from any of these diseases?

1. **Bunk-itis, or Chronic Gassing**—an affliction which causes its victim to expend thousands of good words trying to put something over, only to get a couple of bad words for his pains. Use your bunk exclusively for sleeping purposes—and don't talk in your sleep.

2. **Mental Myopia**—a near-sighted inability to see beyond the immediate act into all its important consequences; a kind of "see"-sickness that often compels a man to throw up his job. Extend your brains and use them as a telescope.

3. **Mental Astigmatism**—"seeing things crooked." Straighten out your theories; you are wasting time trying to bend your facts.

4. **Enlargement of the Ego**—a disease characterized by severe swelling of the "I." You may be willing to stake everything on your own judgment, ignoring the opinions of others, but perhaps the Company is not.

5. **Laborphobia**—a fear of work, otherwise described as "that tired feeling." This condition is often blamed upon hook-worm. That seems reasonable enough. If you are that sort of a worm you certainly won't have to wait long for the hook.

6. **Boobitis, or Paralysis of the Gumption.** Move out of the state of bewilderment into the state of Missouri. Then the next time somebody tries to slip one over on you, tell him where you're from.

7. **Sleeping Sickness.** Don't complain

if somebody wrecks your train of reasoning while you are slumbering at the switch. You expect your job to take care of you. Why shouldn't you reciprocate?

8. **Atrophy of the Intellect**—a wasting away of gray matter caused by jumping at conclusions instead of giving the brains a little much-needed exercise. The power of reason differentiates men from beasts. Be human.

9. **Rheumatic Recollection.** Don't blame your memory for going lame if you abuse it. Company memorandum books are free. They cure that complaint.

10. **Softening of the Spine.** If you believe you are right and the other man insists you are wrong, make him prove it. You don't need to be bullheaded about it, but never let anyone bluster you out of your backbone.

11. **"Yellow" or "Buck" Fever.**—An illusion that leads the victim to imagine he can sidestep his responsibility by passing the buck to somebody else. Don't try to shift your job onto the other fellow. If you'd rather not handle it the Company prefers to pick out a man for the work itself.—Anonymous.

Passing the Buck.

The Colonel calls the Major,
When he wants something done,
And the Major calls the Captain
And starts him on the run.

The Captain then gets busy,
And strives to make it suit,
By shifting all the baggage
On a shavetail Second Lieut.

The said Lieutenant ponders,
And strokes his smoothy jaw,
Then calls a trusty Sergeant—
To him lays down the law.

The Sergeant calls the Corporal,
Explains how it must be,
Then the Corporal calls a Private,
And that poor Private's me!

—Judge.

The Chicago Pneumatic Tool Co.

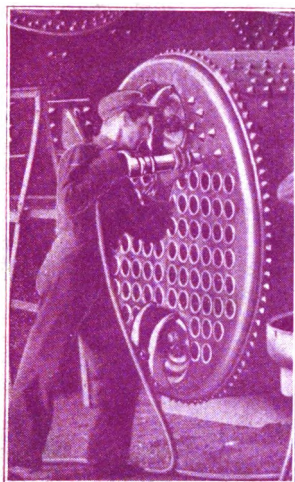
MANUFACTURERS OF THE FOLLOWING

PNEUMATIC TOOLS, APPLIANCES, ETC.

After Coolers	Hammer Drills, Pneumatic
Air Compressors	Hammers, Riveting
Air Injectors	Hammers, Chipping and
Air Motors	Calking
Air Receivers	Hammers, Stone
Air Jacks	Hoists, Electric
Airoilene Oil	Hoists, Pneumatic Geared
Airoilene Grease	Hoists, Straight Lift
Angle Gears, Boyer	Holders-on
Automatic Oiling Devices	Hose, Special High Grade
Chucks, Drill	Hose Clamp Tool
Chucks, Expanding	Hose Couplings (Universal)
Commercial Car	Inter-Coolers
Drift Bolt Drivers	Motor Trucks
Drills, Boyer	Oil Driven Compressors
Drills, Hummer Hammer	Oil Engines
Drills, Keller	Railway Motor Section
Drills, Little Giant	Cars
Drills, Rock	Reamers
Drilling Stands	Rivet Busters
Elevators	Riveters, Jam
Electric Drills, Little Giant	Riveters, Yoke
Electric Grinders, Little Giant	Riveters, Compression
Gas Engines	Sand Rammers
Gasoline Driven Com-	Speed Recorders
pressors	Staybolt Chucks
Gasoline Engines	Stone Dressers
Grinders, Portable Electric	Vacuum Pumps
Hammer Drills, Electric	Winches, Portable

When writing to advertisers please mention Ideal Power.

Multiplying Man Power With Labor Saving Machinery

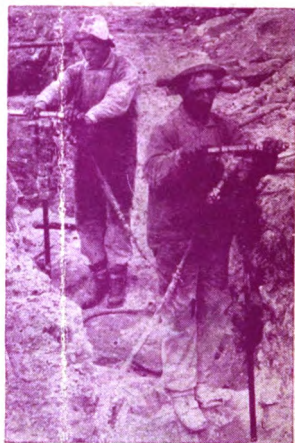


Boyer Riveting Hammer
at work

One man with the aid of an efficient pneumatic or electric tool can easily do the work of from two to four men, which means not only a saving in time and money but an increase in the Man Power of the nation by releasing men for other work.

Chicago Pneumatic tools in vast variety of styles and sizes for riveting, chipping, calking, drilling, wood boring, reaming, grinding and other elementary processes of manufacture are at your service. Let them multiply your man power and speed up your production.

Let them help win the war.



Hummer Hammer Rock Drill
at work



Little Giant Air Drill
at work.



Little Giant Electric Drill
at work

Send for Bulletins

Chicago Pneumatic Tool Company

1014 Fisher Building
CHICAGO

BRANCHES EVERYWHERE

52 Vanderbilt Avenue
NEW YORK

AUG 26 1932

NYPL RESEARCH LIBRARIES



3 3433 10779 1232